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MENTAL HYGIENE OF THE PRE-SCHOOL CHILD¹

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It will be seen that we have to consider the ways in which the medical profession can help to apply the scientific facts of normal child development, both mental and physical, for the benefit of pre-school children. My task is to introduce the subjects covered by the term "mental hygiene". This may be taken to mean the study of ways of encouraging healthy mental development, and an endeavour will be made to mention some scientific facts which have

been discovered dealing with this subject. Scientific facts exclude any theories, no matter how attractive they may be, which cannot be supported by a large series of facts and which cannot be used to predict future events with some degree of certainty if certain prior conditions are fulfilled.

In order to clear the ground a little, it is desirable to rid our minds of the artificial distinction between mental and physical, and to consider the behaviour of the child as an integrated unit which lives in, acts upon, and is acted upon by its environment. This environment consists of such diverse elements as other human beings of various ages, with their peculiar ways of feeling, thinking and acting, other living things, and an amazing variety of non-living objects which have a varying appeal to the young child. The reactions of the child to this environment are not exclusively mental or physical, though at times the reaction may seem to be isolated to

¹Read at a meeting of the Melbourne Pædiatric Society on April 13, 1938.

one or other of these artificial and unscientific distinctions. Congenital dislocation of the hip, a paralysed limb, a rheumatic heart, faulty vision or hearing are associated with mental as well as physical disabilities, and the development of a child with one of these will depend to some extent on the physical defects, but also on the child's temperament and intellectual characteristics; and these factors may all require consideration if we are to understand problems which arise. It is also apparent that in a case of feeding difficulties it may be necessary to consider the likes and dislikes of the child and the attitude of those around, as well as the characteristics of the food and the gastric form and functions.

In assessing the difficulties in development arising from mental defectiveness we have to realize that these difficulties arise primarily from an organic defect in the central neurones, that is, a bodily cause, but also from the mental attitudes resulting from this in the child itself and in those with whom it comes in contact. Therefore, without attempting to make such distinctions, it is desirable to consider the development of the child as shown by all aspects of its behaviour, in association with all the relevant factors in its environment.

Apart from the development of height, weight and general nutrition, which will be dealt with by later speakers, we have to realize that there is a gradual development of intelligence, as shown by the child's capacity for thinking and reasoning and learning fresh activities, such as speech, and also by a refinement and adjustment of the child's feeling and emotional reactions. This development may be greatly influenced by environment, for example, lack of interests or play materials, lack of suitable companions, or a lack of security and affection, as well as by a possibly innate inherited incapacity to develop. If such hindrances are present we may have the development of incapacities, both intellectual and emotional, of character defects, of neuroses or even of psychoses in later life.

The importance of such conditions may be shown by a few figures; for example: mental defectives are in the proportion of 2% of the population; neuroses are a large but undefined cause of ill health and incapacity; 1,700 adults are admitted each year to mental hospitals in Victoria. In many of these conditions inheritance seems to play a large part; but it does not play so large a part as is commonly thought. This has been shown by some studies of identical twins, one or both of whom have developed a definite psychosis.

If we assume that there is an inherited tendency to ill health in these ways, this is not a sufficient reason to evade efforts to prevent the development of these disorders, nor to embark on a wholesale scheme of sterilization, any more than a tuberculous parent should prevent efforts to avoid infection of his offspring. Rather should it be a reason for increasing our efforts to obtain as healthy a development as possible.

It seems a scientific fact that a child may acquire from contact with parents and others unhealthy ways of thinking and feeling. These may result from imitation and suggestion, or from a reaction against faulty handling, or from a failure to establish a satisfactory departure from infantile ways of behaviour.

We have also to consider as a scientific fact that intelligence, the ability to learn, is to a large extent inborn, though to how great an extent the quality of the intelligence is due to genuine germinal inheritance, to disease or malnutrition of the developing embryo, or to natal or post-natal influences must be regarded as uncertain. It seems probable, for example, that faulty nutrition of the pregnant mother may have a profound effect on the development of the child's nervous system, just as we know that it can affect the skeletal make-up of laboratory animals; but further research in this matter is required. We have to realize that with recent advances in intelligence testing a reliable estimate of the child's development may be obtained in very early years, and that this tends to remain constant throughout life.

We may also assume that temperamental constitution is also to a large extent an inherited characteristic, though, without accepting the theories of Freud and his followers as proven scientific facts, we have to believe that the emotional responses of the infant and young child may be modified to an amazing degree by environmental influences. The importance of such factors as satisfactory breast feeding, gradual weaning and undue emphasis on machine-like regularity of bowels and bladder should all be considered in relation to the possibilities for optimum emotional development in later life; but no definite scientific facts can at present be deduced from our knowledge of such matters. It is, however, obvious that the child's emotional life in early months is quite an active one and that it is to some extent centred round the sensations arising from mouth, rectum and bladder. From this primitive stage there should be a development in which the child's interests and emotions are directed away from itself, first towards the adults who minister to its needs regarding food, warmth and general comfort, and later towards others who are less directly interested (for example, other children and adults), until we reach or should reach a stage of adult altruism. There is no doubt that this development may be hindered by environmental circumstances; for example, the fussy, over-anxious or emotionally starved mother who attempts to keep the child infantile by not allowing it to make attempts to feed or clothe itself or to mix with other children.

A fundamental need in the child's emotional development is an atmosphere of security, and when this is lacking, either, for example, through separation, sickness or death of parents, sudden and repeated changes of home, or foolish threats of punishment, there may be a tendency for the child

to cling to infantile modes of reaction, such as tearfulness and tantrums, for the attention and consequent feeling of security that they bring. The same tendencies may arise in circumstances in which the child finds by experience that it is unable to mix in a satisfactory and enjoyable manner with other children, because of either mental inferiority, bodily defect or lack of opportunity.

Whenever for some reason development is not proceeding satisfactorily we find indications that such is the case by the presence of behaviour or personality problems; and as the path of development in young children is frequently beset by difficulties, such problems are extremely common. If, however, the environment is reasonably satisfactory and the significance of these problems is understood, they are generally of a temporary nature. If, however, the handling of a child and its problems is unsatisfactory there is a great tendency for these to persist or to be replaced by another type of behaviour which may be equally difficult; for example, thumb sucking may be replaced by masturbation or enuresis or both, for such problems are often multiple.

One difficulty that the child has often to meet is that of the arrival of a younger child in the home. It is easy to see how such an event can be a severe strain on the child who has formerly been either an only or youngest child, the centre of affection and attention; for he is now displaced from such a position, often without warning, in favour of an unpleasant, noisy and attention-compelling baby who is not to be touched in any way or disturbed by the other child's games. Foolish statements by fond aunts and uncles about the mother now having no time for anyone else, and unfortunate moves, such as the child's being sent to preoccupied and rather uninteresting grandparents during the confinement, only tend to make the matter worse. It is very common to find various behaviour problems arising at such a time, and their obvious object is to bring back the attention and interest of the parents. Such problems may persist and be the source of later nervous and mental trouble. With reasonable care, such as arousing the elder child's interest in the approaching event and endeavouring to arouse an interest in the welfare of the baby and allowing some slight share in its care, such difficulties can generally be overcome. Such an event may serve as a very satisfactory introduction to sex knowledge instead of its being a source of much puzzled phantasy, anxiety and behaviour problems.

Without attempting to exhaust the list of problems it may be as well to enunciate a few of the more common. One of the most important for the future welfare of the child may be an apparent lack of any difficulties; that is, the child may be excessively obedient, punctilious about bodily cleanliness and tidiness, never get dirty or play with dirty children, but just sit in a party frock in the approving atmosphere of adult relatives. Such a child seems to be in danger of a very unsatis-

factory adjustment to life, though parents may be difficult to convince on this point.

Backwardness in development may be explained away by fond parents and also by doctors as due to a variety of circumstances, such as prenatal worry or shocks, feeding difficulties in infancy, the infections of childhood, various injuries, especially to the head, and so forth; but it is necessary to examine such supposed causes with great care. None of them can be absolutely discarded as causative influences; indeed, they should be held suspect. There do seem to be retardations due to lack of opportunity, as shown by some children from homes or institutions, or to ill health; but as a general rule we have to be on guard lest there may be an inborn lack of intelligence which will not be outgrown in the passage of time. This may be shown by intelligence testing, and if such inborn lack of intelligence exists, care should be taken to see that the condition is treated by the provision of suitable sense stimuli, interests and encouragement, which will lead to the maximum development, rather than by expecting too much, providing unsuitable play material and generally inhibiting efforts by blame and discouragement.

It is not true that intellectual subnormality of any grade necessarily leads to adult delinquency; but it is often possible to trace such a development from lack of understanding of the needs and abilities of the child. Intellectual subnormality may be a complicating factor in many of the behaviour problems; but they may also arise when no such disability exists.

Emotional difficulties, such as temper tantrums, fear or jealousy reactions, an excessive tendency towards day-dreaming, with lack of concentration on reality, are amongst the danger signals of faulty adjustment. Similarly, behaviour problems, such as disobedience, lying, dishonesty, cruelty and destructiveness, should, if persistent, be considered as pointing to a need for readjustment in some way, though it must be realized that the development of adult standards in these respects is generally a slow and difficult process. This is not made easier by such factors as the social white lie and parental demands for minute obedience at awkward moments and stupid threats of what will happen if they are not obeyed.

The apparent lack of appetite, which leads to parental concern and dramatic scenes of coaxing and play-acting at every meal, with the enhanced feeling of importance which results, is another common symptom, and the same sequence may be at work in cases of constipation.

Enuresis and faecal soiling occur so frequently in association with other behaviour problems that it seems certain that in very many cases their origin is to be found in emotional disturbance, and it is felt that no plan of treatment which neglects this possibility has a fair chance of success. Similarly, the splinting of limbs to cure the disorders of thumb-sucking, nail-biting and masturbation fails to tackle the trouble at its source; and

the same argument holds for the routine prescribing of sedatives for nightmares, night terrors, sleep-walking and nocturnal restlessness.

Another troublesome group is that of the tics, which so often masquerade as chorea, but which nevertheless seem indicative of some emotional disturbance.

In dealing with all such problems we have, of course, to consider the organic make-up of the child and to correct bodily disorders if present; but it is necessary to consider seriously the possibility that such disorder may be coincident but not directly causative; for example, enlarged tonsils are not necessarily the cause of night terrors or enuresis, and their enucleation need not and often does not lead to recovery. Our therapeutic efforts should not be considered exhausted when organic defects have been treated.

One important point of view that is often overlooked is that of the child itself; and very often the child's own story of its complaints, told without the inhibiting effect of the presence of parents, may reveal sources of discontent or unhappiness which can be dealt with. This may demand tact, time and trouble, and the difficulty is increased by the hurried atmosphere of the consulting room and bygone threats of mutilation by the doctor if disobedience or masturbation is not discontinued. In spite of this, there seems no doubt that the medical profession should play a much more important rôle and take much greater interest in the prevention and treatment of behaviour problems in the young child. Even with the increasing growth of institutional treatment the medical attendant retains the privilege of seeing the child in its own home, and should be able to sum up the various aspects of its environment. Moreover, there is still a certain prestige attaching to our learned profession, and the public is willing to listen and often to act upon our advice, and to accept our reassurance when, as often happens, this is required.

At present, however, we have to admit that much of our advice is unsound, owing to ignorance and an inability to visualize the child as anything but a collection of organs which may each become diseased and require treatment. This leads to the perpetuation of fallacies, such as a weak stomach being the cause of vomiting, a weak bladder of enuresis, weak bowels of constipation, and so forth. Although we may perhaps have to assume some organic inferiorities, these are certainly not the cause, but rather the weak spots through which emotional disturbance finds its outlet. There should be no need to remind a medical audience that the bodily accompaniment of an emotional upset, such as fear, may be widespread, causing, for example, tachycardia, sweating, tremors, evacuation of bowels and bladder, nausea and vomiting. When we are faced with such problems there is, however, a tendency to consider the organ apparently affected rather than the emotional state affecting it and the circumstances arousing the emotion. This tendency

will unfortunately only too often fall in with the wishes of the parents, who will find it much easier to give the child a dose of mixture three times a day than to arrange for a change in attitude of those around, or fresh interests and companionship; and yet it is the latter which is often required.

Without wishing to trespass on Miss Heinig's subject, I wish to pay tribute to the great value of the interests in play and companionship which are to be found in nursery schools and kindergartens. This is especially the case with small families or only children who have to spend their days with adults in flats or maisonettes, with no suitable play materials. Unfortunately such children seem to be increasing.

May I sum up the ways in which, in my opinion, the medical profession can help the pre-school child.

First, by learning something about it, the facts of its development and the importance attaching to these from the aspect of the nervous and mental health of the community. Possibly post-graduate lectures might be arranged.

Secondly, by appreciating behaviour problems at their proper value as indications of the need for some readjustment of the factors influencing intellectual and emotional development.

Thirdly, by giving parents some insight into the causation of these problems and their proper treatment, with reassurance when required.

Fourthly, by giving more children better opportunities for development, by aiding in every way the further extension of nursery schools, kindergartens and any other possible facilities.

And may I add one word of warning. As one can see from the daily newspapers, interest in child development has grown tremendously in recent years, and unless the medical profession fits itself for the treatment of such problems, others with a less wide knowledge of the possibilities and a less well-balanced outlook on human health will take the lead. I believe that this will result in detriment to the health of the community and the prestige of the medical profession.

NUTRITION OF THE PRE-SCHOOL CHILD.¹

By VERA SCANTLEBURY, M.D.,

Director of Infant Welfare, State of Victoria.

It is with mixed feelings that I stand before you tonight to introduce in the space of twenty minutes the important subject of care of the pre-school child from the nutritional aspect; but I thank you for the honour you have done me in asking me to undertake this task. I have been asked to discuss the provision of standards for assessing the nutritional state of the children of the pre-school age and their nutritional requirements.

¹Read at a meeting of the Melbourne Paediatric Society on April 13, 1938.

Methods of Inquiry.

There are several types of inquiry⁽¹⁾ advised, according to the number of children to be examined.

As a first type, aiming at the rapid classification of a large number of individuals, the experts suggest that cards should be compiled, showing age, sex, physical appearance (slender, medium and stocky types), weight, height, and possibly sitting height, and results of simple clinical examination. A second type of inquiry, involving more thorough examinations and covering a smaller number of individuals, includes, in addition to tests of the first type, an economical and social investigation (more especially into the diet of the family and the child), a thorough medical examination, and a series of tests, particularly tests for pre-deficiency in vitamins A, C and D. A third type of inquiry aims at the scientific study of the influence of a quantitatively and qualitatively deficient diet on all the functions of the organism, both physical and mental.

As you know, the Commonwealth Government has appointed an advisory council on nutrition to advise the Government on the present state of nutrition of the Australian people. In the third and fourth reports of the council it will be noted that Dr. F. W. Clements is carrying out a survey of the nutritional state of the children of the inland areas. A short discussion of the methods of assessment which he is using would be useful, especially if any other nutritional surveys are to be made in Australia. It might be possible for such surveys to be conducted on similar lines, if practicable (with slight variations perhaps), so that, with the same standards, comparisons may be made of the results, certain allowance always being made for variations due to the personal equation of the examiner.

The following are the particular of the many possible methods on which Dr. Clements is basing his inquiry:

(a) *Physical*.—Nine physical measurements are taken, being so selected as to enable the following standards of nutrition to be calculated: (i) height and weight for age, (ii) weight for height, (iii) arm-chest-hip index, (iv) the pelidisi index of von Pirquet.

(b) *Clinical*.—(i) A general clinical examination of the eyes, nose, throat and thorax, together with careful appraisal of the state of development and nutrition as assessed by general clinical examination; (ii) the application of von Pirquet's "sacratama".

After using the first type of inquiry Dr. Clements determines whether the state of nutritional development is "satisfactory" or "unsatisfactory". Those children falling into the latter class and a number of the "satisfactory" type are submitted to one or all of the following tests: (i) an X ray examination of the epiphyses at the wrist, (ii) an estimation of the hæmoglobin value, (iii) Göthlin's capillary resistance test for scurvy and border-line scurvy, (iv) a visual acuity test for partial night blindness.

In addition, an attempt is made to correlate the children's diet with the nutritional state. The children are asked to write a composition under the heading "What I ate yesterday", and to include

every article of food eaten, and the time of the meal at which it was eaten. Information concerning the social status, home life *et cetera* of the families was obtained from the school-teacher, and this information was used in the correlations.

In a discussion on height and weight measurements as a test in assessing nutrition, Professor E. J. Bigwood⁽¹⁾ states that these measurements form a basis of all somatommetrical tests. He goes on to say:

... a study of the trend of the mean weight and mean height of children and adults in the same social group from year to year, or a comparison between such values obtained at the same period in different social groups can provide interesting data on the state of nutrition. This conclusion justifies the proposal which has been made to repeat these measurements at given intervals.

For instance, statistical averages of height and weight show differences between children of different countries, of different parts of the same country, of different races in one and the same district (if such differences are looked for), of different social conditions or feeding habits, of identical age but examined at different times, and between children examined at different seasons. Dr. Hilda Kincaid⁽²⁾ found that pre-school children in Melbourne grew more rapidly from January to July.

"On the other hand", continues Professor Bigwood, "it is of lesser value in assessing the state of nutrition to compare these same data with those of the table of so-called normal figures, the criteria of normality being difficult to determine." He says that there is no objective criterion of normality in respect of mean values, nor is there any as regards the limits of individual fluctuations round the average.

Various authorities give such different limits that it would be interesting to follow, if possible, on what they base their conclusions. For instance, the following "normal limits" are given:

Emerson (United States of America) + 7% or - 7% from the mean.
Baldwin and Wood (United States of America) + 20% or - 10% from the mean.
A French authority + 15% or - 15% from the mean.
Brailsford Robertson (Australia) + 14% or - 14% from the mean.

The width of this margin may vary with the age. However, Professor Bigwood concludes:

... generally speaking, the majority of health experts now accept the view that a simple record of the mean weight and the mean height of children is all that is really necessary and that it is better to keep to these two absolute figures in large-scale inquiries to the exclusion of more complicated measurements. The recording of these data is only of real interest when it is periodically repeated, preferably at comparable times of the year, and when these data are compared with other observations concerning social conditions, school results, standard of living, certain general clinical indications, and lastly, certain physiological tests. Only then can they give useful information on the state of nutrition to the mode of nourishment.

In practice I have found these measurements, used with care, of great assistance and interest.

It may be said that Franzen and Palmer, the authors of the age-chest-height index, declare that by its use under-nourished children can be selected in a proportion of three-fifths of the children with gross defects, against one-fifth by other indices, the height-weight-age method for instance. In an investigation of some South African boys, Dr. C. Louis Leipoldt⁽³⁾ found the index to give a percentage of malnourished children closely corresponding to that obtained by clinical methods. Franzen and Palmer acknowledge that the measurements can be effected only by specially trained observers if comparable data are to be obtained.⁽⁴⁾

The fourth somatometric method used by Dr. Clements is von Pirquet's pelidisi index. This is being used by other investigators in Australia and has been made simple by Dr. W. Christie, principal medical officer of the Education Department, South Australia, who has prepared a practical card of reference for use of school medical officers. This card has done away with the calculations of converting inches and pounds to centimetres and grammes, and his standard index is 0.945. Any children with an index below this require further investigation; but in young people the rate of growth must always be allowed for. Reports as to the efficacy of this test vary, so that it will be interesting to note the findings of a worker, such as Dr. Clements, who is using these four different tests, together with a clinical examination, a sociological inquiry, and some physiological tests on the same children, and so to compare the relative values of the tests.

Now we come to the clinical examination, a very important part of the nutritional assessment inquiry.

I agree with the statement made by Dr. R. H. Simpson⁽⁴⁾ that "the opinion of a sound physician is still the best guide to the state of nutrition: a better and simpler substitute for it has yet to be found". But results of measurement are very useful to check clinical findings, and are helpful in inquiries such as the one at present being conducted in Australia.

The Health Commission of the League of Nations advises that children in particular should be systematically and periodically examined. I should say that this was necessary at least twice a year in the case of the pre-school child. The commission also lays stress on the fact that the optimum nutritional state is the normal one, assuming excellent to be the normal state, rather than classifying the general condition of the child as excellent, normal, slightly subnormal, bad. A classification using the terms good, doubtful, bad has been suggested; but generally speaking no entirely satisfactory scheme has yet been devised for a simple, standardizable, clinical examination to be applied on practical lines to mass investigation. Von Pirquet suggested the "sacratama" index to assess (i) the blood content of the skin (*sanguis*); (ii) the condition of the subcutaneous fat layer (*crassitudo*), (iii) the tension, or more precisely the

elasticity, of the skin (*turgor*), (iv) the condition of the muscles (*musculus*), the vowel in the word to be varied according to the conditions found: i = very pronounced, e = pronounced, a = normal (average), o = inadequate, u = quite inadequate. Many consider this index impracticable. Dr. Clements has adopted it in his inquiry.

In clinical examination I feel there are several characteristics to be specially discussed among the many clinical features to be observed. I would emphasize the importance of pallor, which so often occurs in badly-fed, over-fatigued children, even before the actual anemia is detected. Dr. Eileen FitzGerald, chief medical officer of the Education Department, Victoria, specially emphasizes this point and urges the importance of further investigation and treatment by their own doctors of such patients reported to them from the schools, even if the children's weights range about or may be above the average.

When considering the muscular system, poor posture, both sitting and standing, is a feature often noted in examination of pre-school children, and I believe in such children it is usually indicative of poor nutrition. The camera is very helpful in recording such cases.

Professor Bigwood⁽¹⁾ tells us that Professor C. Schiotz specially recommends one sign as indicative of a true state of the nutrition. This is the appearance of the median furrow of the back when the arms are held straight above the head. The observer should observe two points: the appearance of the spinal column viewed from behind, and the posture of the individual examined in profile. This test was discovered by Knudsen in Denmark. It is believed to be an indication of defective nutrition when the median furrow is broken or unduly sinuous, the broken appearance being more important to watch for. This test is very little influenced by gymnastics. The sign appears to depend on normal development of the spine and thorax under the influence of a properly balanced diet.

It is difficult to standardize the different bony deformities which may be found, for example, rickets. The following have been called the five standard signs of rickets: (i) bossing of the parietal bones, (ii) bossing of the frontal bones, (iii) bony changes in the chest wall, (iv) knock-knees, (v) bow-legs. Additional signs to be considered are the following: (vi) enlargement of radial epiphyses, (vii) spinal curvature, (viii) beading of ribs. One of these signs, if pronounced, or two or more have been said to constitute positive signs of the presence of rickets. The only sure test is X ray examination of the wrist, and together with the only test capable of revealing a pre-rachitic condition, estimation of the phosphatase content of the blood, it provides a useful early certain sign. The large amount of blood needed for the phosphatase test makes it not feasible for use in general clinics. It is a specialist's test.

Examination of the teeth is regarded as an excellent test of satisfactory or unsatisfactory nutrition.

Our Australian diet must be very bad in the ante-natal, pre-school and school ages. I find amazingly few girls with perfect teeth in one of our larger secondary schools, some teeth usually being either stopped, absent, misplaced, or occasionally carious. Actual figures have not been calculated. In Table I the results of recent examination of children (33,000) by officers of the Education Department in Victoria are shown.

TABLE I.
Results of Examination of the Teeth of 33,000 Victorian Schoolchildren.

Type of School.	Pupils.	Number.	Percentage Requiring Treatment.	Percentage with Filled Teeth.	Percentage Wearing Artificial Dentures.
Elementary ..	Boys ..	—	27.3	16.0	—
	Girls ..	—	40.4	23.5	—
High ..	Boys ..	976	20.3	36.4	0.9
	Girls ..	891	40.6	46.1	2.1
Technical ..	Boys ..	1,929	17.0	24.0	0.4
	Girls ..	454	30.4	40.5	1.8

The dental officer of the Free Kindergarten Union of Victoria examined 428 children in eight kindergartens and found that 1,181 teeth required to be filled and 185 required to be extracted. Ten children had no dental defects. At the Melbourne Dental Hospital the examination of 40 children showed that 254 teeth required to be extracted and 397 required to be scaled and cleaned. Examination of some pre-school children in the city of Melbourne by the City Medical Officer of Child Welfare, Dr. Kincaid, showed that of children aged between two and six years 54% had dental defects, and of those aged between five and six years 80% had dental defects.

I should welcome a discussion on the standardization of nose and throat defects in relation to nutrition. Are such defects due to nutritional causes? Are they secondary to acute or chronic infections? Is infection (acute or chronic) secondary to poor nutrition? Animal experimentation seems to point to some correlation between nutrition and infection; but is there much illumination on the subject when it applies to human beings?

It is realized that the somatometric and clinical findings show the morphological state of the subject. On the other hand, malnutrition may interfere with the function before modifying form. Hence the importance of inquiries as to the child's behaviour, appetite, activity and capacity for work or play. There are many tests concerned with physiological functions liable to be affected by under-nutrition, but they are not yet to be regarded as early tests for malnutrition, and many because of their tedious character and for other reasons are not applicable to examination of the pre-school child.

Insufficiency of protein in the diet may be revealed by a lowering of the basal metabolic rate, but only during pronounced, protracted under-nutrition.

It has not been proved that blood measurements, for example, sugar content and others, can be taken as a sensitive index of defective nutrition. It is the

same with urinalysis, except in very pronounced under-nutrition and starvation. The same also may be said of various fatigability tests.

Last, we must briefly mention the specific physiological tests for malnutrition, some of which have been adopted by Dr. Clements, as noted above. Professor Bigwood⁽¹⁾ says that, speaking generally, the consideration is that of early deficiency in "protective nutrients". An unsatisfactory standard of life leads to a deficiency of protective foods in the diet before any deficiency in aggregate calorie intake occurs.

The development of deficiency diseases may now be divided into two successive stages: (i) prodromal occult period of slight hypovitaminosis, (ii) period characterized by more pronounced clinically apparent deficiency disease. Up to the present we have not sufficient experience to permit of the early diagnosis of latent vitamin pre-deficiency, except in the case of partial deficiency of the three vitamins A, D and C.

Vitamin A.—The present tests depend on the measurement of the rapidity with which the visual purple pigment of the retina, on concentration of which deficiency in diet of vitamin A has considerable effect, is bleached under the influence of light and regenerated in the dark. They are of doubtful use in testing the small pre-school child for vitamin A deficiency.

Vitamin D.—The X ray and the phosphatase tests have already been mentioned.

Vitamin C.—Göthlin's test is being employed by Dr. Clements; but as it takes at least three-quarters of an hour to perform it would seem to be of doubtful use in the examination of the pre-school child. Rotter's intradermal test for vitamin C, used and described by Portnay and Wilkinson,⁽⁵⁾ may prove very useful after further investigation. A certain dye, which is decolorized by ascorbic acid, is injected intradermally. A decolorization time of less than five minutes indicates tissue saturation with vitamin C, while a period of ten minutes or longer is in favour of a deficiency.

Iron Deficiency.—In the estimation of the hæmoglobin value, Van Slyke's method is recommended. Dare's hæmoglobinometer is used in England. Further studies need to be carried out with a view to the statistical comparison of nutrition in groups differing from one another in respect of mean hæmoglobin value of the blood. It is most important to know the normal variations of hæmoglobin in young children to appreciate the significance of departures from the normal level found in adults.

Standards of Dietary.

Now we come to a discussion of a standard for dietetic requirements for the pre-school child.

If it were economically possible to offer every child a suitably varied and attractive diet, the choice of diet could, I believe, be left to the individual taste, provided that the child was not hampered by authority and custom and the food

TABLE II.
Showing Daily Quantities and Approximate Composition of Foodstuffs, together with Approximate Weekly Quantities and Costs, to comply with Physiological Standards as shown in Table V of the London Report of the Health Organization of the League of Nations. (For a five-year-old child.)

Foods.	Quantity.		Protein. Grammes.	Fat. Grammes.	Carbo- hydrate. Grammes.	Calories.	Calcium. Grammes.	Phos- phorus. Grammes.	Iron. Milli- grammes.	Vitamin A. Inter- national Units.	Vitamin B. Inter- national Units.	Vitamin C. Inter- national Units.	Vitamin D.	Weekly.	
	Grammes.	Ounces.												Quantity.	Cost.
A. Protective Foods.															
Milk	1,000	35 (1½ pta.)	32.0	35	52.0	660	1.18	0.03	2.4	2,920	—	400	+	12½ pta.	s. d. 3 04
Egg (white, 32 grammes)	48	1½ (1½ No.)	6.0	6	—	78	0.08	0.11	1.5	800	22.4	—	+	7 (No.).	0 84
Meat (lean)	30	1	8.0	5	—	77	0.005	0.06	0.0	50	16.5	—	+	12 oss.	0 0
Green leafy vegetables	75	3½	1.0	—	3.5	18	0.1	0.04	1.1	4,180	32.0	165	—	2½ lbs.	0 04
Lettuces (raw)	80	3	2.0	—	18	84	0.01	0.01	0.3	1,500	18.5	30	—	1½ lbs.	0 24
Potatoes (cooked)	80	3	2.0	—	18	84	0.01	0.01	0.3	1,500	18.5	30	—	2 lbs.	0 8
Root vegetables (cooked)	80	3	1.0	—	6	27	0.06	0.05	0.5	1,960	40.5	180	—	2½ lbs.	0 9
Apples (cooked, 90; raw, 60)	150	5	1.5	—	23	95	0.01	0.02	0.6	1,600	15.0	35	—	7 (No.).	0 7
Orange	150	5	1.5	—	15	65	0.04	0.03	0.6	1,300	68	1,600	—	7 (No.).	0 7
Butter (suggested substitute for 3 grammes of cod-liver oil as source of Vitamin D)	30	1	—	25	—	225	0.005	0.005	0.1	1,520	—	—	++	7 oss.	0 7
B. Supplementary Energy Foods.															
Bread	90	3	9.0	1	48	240	0.03	0.09	0.7	—	49.5	—	+	1½ lbs.	0 34
Cereals	15	½	2.5	—	10	59	0.1	0.08	0.7	—	—	—	—	1½ lbs.	0 3
Sugar	30	1	—	—	28	116	—	—	—	—	—	—	—	7 oss.	0 2
(a) Total composition of diet			65.5	73	103	1,744	1.57	1.50	10.4	13,240	287	2,790			7 104
Stiebeling's standard (four to six years)															
			55.0			1,500	1.0	1.0	8.11	3,000 S.U. (4,200 I.U.)					
Physiological standard (League of Nations), five to seven years															
			53.0 to 64.0			1,215 to 1,430									
McKillop (suggested figures)															
(b) Above diet (a) less ½ pint of milk. (Amount left: 30 ounces.)			61.0	68	156	1,450	1.40	1.37	10.0	12,633	287	2,733			7 54
(c) Above diet (a) less 1 pint of milk. (Amount left: 20 ounces.)			52.0	58	171	1,462	1.06	1.11	9.3	11,989	287	2,619			6 7
(d) Above diet (c) plus 1 ounce of bread (Total amount: 4 ounces.)			55.0	58	187	1,542	1.07	1.14	9.5	11,989	287	2,619			6 84
(e) Ecological diet for five-year-old child (see Table IV)			54.8	68.8	173	1,500	1.18	1.26	8.5	5,265	212	1,580			4 04

(NOTE.—Percentages of calories in diet a = 16 for protein, 39 for fat, and 45 for carbohydrate, as against the accepted percentages of 10 to 15, 20 to 40, and 45 to 65, respectively. Minerals and vitamin contents shown in Tables II and III are taken from Sherman ("Chemistry of Food and Nutrition", 1937) and Plummer ("Food, Health, Vitamins", 1936), and are approximate average values only. Others to whom reference has been made are McKillop, Mottram, Rose and Orr.

not spoiled by bad cooking. Dr. C. M. Davis,⁽⁶⁾ of America, experimented on this natural selective power of children, allowing some of them from babyhood to the age of five years, to select their own food. The results were interesting. Miss Heinig had the opportunity of observing this experiment, and she states that the children proved to be in excellent condition and had no food inhibitions. C. M. Richet Fils⁽⁷⁾ says that "children must be given too much if they are to have enough". This is a plea for the offering of a sufficiency as well as a variety, from which again the child will naturally select. As Dr. Gutteridge⁽⁸⁾ remarks, provided the subject is healthy, with a qualitatively and proportionately balanced diet, appetite adjusts the intake to biological requirements.

I feel that it is necessary at the beginning to state these ideals, even if they are not always possible of attainment. I always fear the reaction on some parents of too much standardization of treatment of the child, who is essentially an individual with individual tastes and capacity for digestion. Too strict adherence to a standard diet with fixed amounts may often be the cause of development of bad food habits and indigestion if the diet is enforced

relentlessly. Often common sense, better cooking, perhaps camouflaging of the milk, colouring of the foods, giving smaller helpings, will overcome difficulties; and if there is a definite dislike or idiosyncrasy to certain foods, other more favoured foods may be given to replace them. It is necessary, therefore, for the doctor to advise on the type of food to be offered in replacement to retain physiological balance of the diet.

When thinking on this subject I again felt that the experts should give us our standards, so I obtained them from the London report in *The Quarterly Bulletin of the Health Organization of the League of Nations*,⁽⁹⁾ a document prepared by the technical commission and the mixed committee of the League, the figures of which are agreed on by the Health Commission of the League as average values only. The main idea underlying the report is the expression of the new science of nutrition in regard to protective foods and supplementary energy-yielding foods, special requirements during maternity and growth, and the adoption, not of the indispensable minimum, but of the optimum diet as a standard. The idea of an optimum diet has been developed and brought into evidence by science. An optimum diet is one which provides for full development of the individual, for efficiency without exhaustion, for his resistance to disease, and for the prevention of latent states of malnutrition, for example, pre-scurvy, pre-rickets, pre-osteoporosis, pre-pellagra, pre-beriberi, and pre-caries or formation of teeth of imperfect architecture.

Preventive action is of less importance than the acquisition and application of such knowledge as will also improve the general condition and well-being of every man, woman and child through the better choice, provision and utilization of foodstuffs.⁽¹⁰⁾

Miss Betty Wilmot, the dietitian of the Victorian Railways, has at my request most kindly and ungrudgingly given much of her spare time and skilled effort in preparing tables, with menus accompanying them. Table II has been drawn up to comply with physiological standards as set out in Table V of the League of Nations report mentioned above, for a child aged five to seven years. It includes the amounts and composition of ingredients in which the approximate vitamin and mineral amounts are shown as well as the carbohydrate, fat and protein. Also included is the cost of the materials at our average Melbourne prices. (The total cost per week is 7s. 10½d.) This table is very useful, as it shows the relation between scientific and household measures. Menus (and some recipes), with amounts in ounces and table-spoons and teaspoons, are also given. If the amounts in the second column in Table II are remembered approximately, it will be very easy to scan daily dietaries in order to see if they approximate to the suggested standards. I regard this as a link between the theoretical standards and the practical diets.

Because of the difficulty occasionally experienced in getting children to take this amount of milk (one and three-quarter pints daily) we have shown that even when milk is lessened to one and a half

TABLE III.
Economical Diet for Five-Year-Old Child constructed to reach Stichel's Standard. Showing Daily Quantities and Approximate Composition of Foodstuffs, together with Approximate Weekly Quantities and Costs.

Foods.	Quantity.		Calories.	Carbo- hydrate, Grammes.	Protein, Grammes.	Fat, Grammes.	Iron, Milli- grammes.	Vitamin A, Inter- national Units.	Vitamin B, Inter- national Units.	Vitamin C, Inter- national Units.	Vitamin D, Inter- national Units.	Weekly.		
	Grammes.	Ounces.										Quantity.	Cost.	
A. Protective Foods.														
Milk (whole, fresh) ..	570	20	378	30.0	18.5	21.5	0.53	1.4	1,470		230		7 pda.	1 0
Milk (skimmed), or ..	285	10	115	13.5	7.1	3.6	0.26	0.7	—			+	7 pda. or	0 4½
Milk (dried) ..	30	1		—	8.0	5.0	0.06	0.9	20	16.5		+	7 oza.	0 3
Meat ..	30	1	77	—	8.0	—	0.01	0.3	1,500	13.5	30	+	1 lb.	0 2
Green leafy vegetables ..	30	1	5	1.0	0.3	—	0.01	0.6	50	9.0	180	+	1 lb.	0 1½
Potato (cooked) ..	90	3	84	18.0	3.0	—	0.05	0.5	1,900	40.5	180	+	2 lbs.	0 3
Root vegetables (cooked) ..	90	3	27	6.0	1.0	—	0.01	0.3	65	34.0	900	+	3 No.	0 3½
Butter ..	75	2½	33	7.5	0.7	(3.0)	—	—	(1,500- 3,000)				6 drachms.	?
Half an orange or one lemon ..			(27)	—	—									
Cod-liver oil ^a ..	3	—		—	—									
B. Supplementary Energy Foods.														
Dripping ^a ..	30	1	270	—	—	30.0	?	?	?			?	7 oza.	0 2½
Bread ..	30	1	240	48.0	9.0	1.0	0.03	0.7					1 lb.	0 3
Optimal ..	30	1	118	20.0	5.0	2.0	0.12	1.4		99.0		+	1 lb.	0 1
Sugar ..	17	½	68	17.0	—	—	0.03	1.0					3 oza.	0 1
Tricale ..	15	½	36	9.0	0.2	—	0.07	0.3					2½ oza.	0 1
Cocoa ..	10	—	48	4.0	1.8	2.7	0.01							
Total composition of diet ..			1,499	172.5	54.8	68.8	1.26	8.5	5,265	212.5	1,520			4 0½

* Suggested meals: liver, tripe, brains, black pudding, stewing steak or chops, minced meat, fish.

† Figures for the vitamin content of dripping are not available; but it is reasonable to suppose the presence of some vitamin A and perhaps some vitamin D. It is probable that cod-liver oil may be necessary in the diet if dripping is used to the exclusion of butter.

‡ Not purely for energy supplying; these foods also contain necessary minerals.

pints the diet will still comply with Stiebeling's standard,⁽¹⁰⁾ or even if it is still further reduced to one pint and an additional ounce of bread or its equivalent in protein and carbohydrate is taken. I feel that possibly some children could take more milk if we limited carbohydrate, which is usually excessive in our diets as judged by the physiological standards given in the London report.

You will note that cod liver oil has not been included in Table II; this is because it is considered that in most cases in Australia vitamin *D* can be supplied sufficiently by butter and sunshine. However, cod liver oil in a dose of one-half to one teaspoonful a day could be given in winter months. You will also note that a little raw apple or lettuce or some such detergent is given at the end of the meal for the sake of the teeth.

In the demonstration prepared, as well as the physiological standard diet for one day for a five-year-old child, I have placed a day's diet actually taken from one of the babies' homes. It includes the protective elements given in physiological standards. It is to be observed in the light of these standards with a critical eye as regards the amount of carbohydrate and the texture of the diet. The children of this institution, partaking of a similar diet, look remarkably well; they have no anemia; their teeth so far are excellent; their weight is good; their posture is normal; their activity is satisfactory; but they suffer from frequent colds.

We have drawn up Table III to show an economical diet to comply with standard quantities in calories, protein, minerals and vitamins, the cost being approximately 4s. 0½d. per week (approximately 7d. per day). You will note in Table III that skimmed milk or dried milk is used to supplement

TABLE IV.

Sample of One Day's Menus for Optimal Diet for a Five-Year-Old Child.

Breakfast:

- Half a glass (four fluid ounces) of orange juice or five ounces of the edible part of an orange (obtained from one large six-ounce orange).
- Lightly milled cereal (half ounce dry weight) (or "Weeties", one breakfast cup).
- Four ounces (half a glass) of milk with cereal.
- One and a half ounces (one slice half an inch thick and four inches square) of bread as crisp toast.
- Half an ounce (less than one level tablespoonful) of butter.
- One glass (eight ounces) of milk, hot or cold.
- One-quarter (three-quarters to one ounce) of apple to complete the meal.

Dinner:

- Meat, one ounce (cooked weight), the amount of meat on an average chop.
- Potato (boiled or baked in jacket), small to medium size, three ounces.
- Carrot, two-thirds of a cup, or three ounces.
- Spinach, half a cup, or three ounces.
- Junket made with five ounces of milk and one-quarter of an ounce (about two teaspoons) of sugar.
- One-quarter of an apple (three-quarters to one ounce) to complete the meal.

Tea:

- Scrambled egg (one egg, one ounce of milk).
- One and a half ounces of bread as crisp toast.
- Half an ounce of butter.
- Three ounces of stewed apricots (one-quarter of an ounce of sugar used in cooking).
- Glass of milk (eight ounces).
- One ounce of lettuce to complete the meal.

(For supper, morning or afternoon tea or additional dinner, nine ounces of milk. Glasses of water to be taken between meals.)

TABLE V.

Sample of One Day's Menus for Economical Diet for Five-Year-Old Child.

Breakfast:

- Half an orange (two and a half ounces of the edible part) or the juice from it.
- Oatmeal porridge (one ounce dry weight).
- Four ounces of fresh whole milk and half an ounce of treacle with porridge.
- One and a half ounces (one slice half an inch thick and four inches square) of bread as crisp toast.
- Half an ounce of dripping.
- Cocoa, containing six ounces of milk (made from dried or skimmed milk), one-sixth of an ounce (two level teaspoons) of cocoa and one-seventh of an ounce (one level teaspoon, approximately) of sugar.
- One third of an ounce of lettuce to complete the meal.

Dinner:

- Meat, one ounce (cooked weight).
- Potato (baked or boiled in jacket), three ounces (one small to medium size).
- Carrot or other root vegetable, two ounces (half a cup).
- Junket or blancmange containing four ounces of milk and two teaspoons (two-sevenths of an ounce) of sugar.
- Small glass of milk (six ounces).
- One-third of an ounce of lettuce.

Tea:

- Milk soup, containing one ounce of a root vegetable and four ounces of milk (skimmed or made from dried milk).
- One and a half ounces of bread as crisp toast.
- Half an ounce of dripping.
- Cocoa, consisting of six ounces of fresh whole milk, one-sixth of an ounce of cocoa, one-seventh of an ounce of sugar.
- One-third of an ounce of lettuce.
- (Glasses of water to be taken between meals.)

fresh whole milk, these being regarded by the Health Commission of the League of Nations as of great importance as foods. The saving and distribution of skimmed milk would mean much to those who have to practise economy in diet, provided it is not used to the exclusion of fresh whole cow's milk. You will note included a day's menu with this economical type of diet.

Table VI is an optimum diet for a three-year-old child, to comply with the physiological standards laid down by the League of Nations. A day's menu is also set down (Table VII).

TABLE VI.

Optimal Diet for Three-Year-Old Child, to comply with the Physiological Standard set down by the League of Nations.

Food.	Quantity.		Grammes of Protein.	Calories.
	English Measures.	Grammes.		
(a) Protective Foods—				
Milk	1½ pints.	1,000	32.0	660
One egg (or one ounce of meat or fish)	1½ ounces (1½ in number) or 1 ounce.	48 or 30	6.0	78
Green leafy vegetables	2 ounces.	60	0.5	10
Potato	2 ounces.	60	2.0	56
Carrot or other root vegetable	1½ ounces.	45	0.5	14
Orange or equivalent	4 ounces.	120	1.0	52
Apple or other fruit	1½ ounces.	45	0.5	26
Butter	½ ounce.	23	—	168
(b) Energy Foods—				
Cereal	½ ounce.	15	2.5	59
Bread	2 ounces.	60	6.0	160
Sugar	½ ounce.	15	—	58
Total	—	—	51.0	1,341

(NOTE.—Cost = 6s. 2½d.)

Time will not allow of further discussion; but I should like in conclusion to point out the somewhat obvious fact that though of primary importance,

provision of mere food is not the only necessity for proper nutrition. The food must be as fresh, digestible and well cooked (when cooked) as possible. Crisp food should be included, and plenty of water given between meals. The food should be attractively served, in attractive and hygienic surroundings, suitable implements should be used, and meal-times should be happy and suitably sociable, although some children need quiet.

The children should come to meals as rested as possible, and should also have a rest after meals. Lack of sleep, overcrowding in bedrooms, and rapacious insects in the beds are responsible for lack of appetite. Exercise, fresh air and sunshine, general hygiene, absence of nagging and fussing about manners are all contributory factors in building up a good nutrition.

TABLE VII.

Sample of Optimal Diet Menus for One Day for a
Three-Year-Old Child.
(Physiological Standards.)

Breakfast:

Juice of one orange (three fluid ounces).
Lightly milled cereal or "Weeties", half an ounce dry weight.
Three ounces of milk with cereal.
One ounce of bread as crisp toast.
One-quarter of an ounce (about two level teaspoons) of butter.
Eight ounces of milk.
Three-quarters of an ounce of apple to complete the meal.

Dinner:

One egg, one ounce of meat or one ounce of fish.
Two ounces of potato.
One-quarter of an ounce of butter.
One and a half ounces of carrot.
One and a half ounces of spinach.
Junket made with three ounces of milk and one-quarter of an ounce of sugar.
Small piece of lettuce to complete the meal.

Tea:

Cream soup, containing six ounces of milk.
One ounce of bread as crisp toast.
One-quarter of an ounce of butter.
Six ounces of milk.
Three-quarters of an ounce of apple to complete the meal.

(For supper, morning or afternoon tea or additional at dinner, eight ounces of milk. Glasses of water to be taken between meals.)

In conclusion, I wish to stress the desirability of dietetic thinking on sound physiological lines when we examine the pre-school child and give advice for his welfare.

Acknowledgements.

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THE TRAINING OF THE PRE-SCHOOL CHILD.¹

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Principles which have Actuated Child Training Practices.

THE justification of child training as practised by child development teachers in nursery schools is predicated on two principles: (i) that human beings carry an unnecessarily heavy preventable load of physical defects and behaviour problems, which decrease their chances of happiness and their maximum efficiency; (ii) that since prevention is in every way more economic and desirable than correction, and since lasting habits are acquired during the first six years of life, training in right beginnings should be given in the nursery years.

The use of the term "child development" instead of "child education" in this connexion is especially significant. Through long association the term "education" unfortunately has come to mean the acquisition of mere facts, detached bits of subject matter, and, in relation to little children, the making of objects with scissors and paper, paste, clay, wood and the like—something to occupy time and to take home to show.

Child development education has conceived its programme on a much broader basis than this. It not only takes the responsibility for training the child in the several aspects of his development, as his physical, mental, social and emotional natures, but it recognizes the fact that these different phases of life are all growing all the time and are interwoven and interrelated so closely that any guidance or training must take into account always that it may be effecting changes in one or several of these phases of life simultaneously.

Child training as practised in nursery schools goes a step further. It recognizes the fact that any programme of child development, to be effective, must be applied to the child's twenty-four-hour day and to every day of his year.

This breaks down schoolroom walls for education, and makes it essential for the teachers and the parents to work in unison at school and at home on an informed, intelligent and mutually acceptable programme for the steady progress of the child.

¹ Read at a meeting of the Melbourne Paediatric Society on April 13, 1938.

Guidance Techniques Practised in the Nursery Schools.

In the actual work of the daily guidance of the toddler the teacher creates an environment that is scaled to the size of the child, whose eye level is at about thirty inches from the floor, and to his interests, for he is just experiencing satisfaction in his ability to explore the world on foot and make independent first-hand contact with it. This environment is supplied with a carefully chosen array of things to push, pull, lift, climb on, slide on, turn, and manipulate in general. The social environment, a group of children of like age and development, is an important part of this ideal environment.

I shall attempt to state here briefly some of the techniques upon which pre-school guidance is based. The first one is to place the child in a safe and good material environment in which he can experiment freely to satisfy his insatiable and normal drive for physical activity. In this environment he is allowed the freedom and time he needs to investigate or play. It is intended then that the environment does much of the teaching, and each child learns differently, according to his interests and experiences. The teacher is there to see that he does experience the right things, if not by interest or accident, then by adult plan.

The second guidance technique is to allow the child to do for himself. The toddler is just beginning to feel his own power to do. He seems by nature full of the desire to acquire social virtues, such as independence, self-help, neatness, concentration on a self-initiated task. He is also full of the desire to work hard, even to the stage of grunting and groaning and flushing with physical effort, of persistence to the point of tears and fatigue, and he takes pride in accomplishment.

Unknown adults who do not see these values in the random and so imagined inconsequential activity of the toddler, cut across his physical, mental and emotional urges to activity by thoughtless commands of "No, you mustn't", "don'ts" and physical restrictions. These approaches lay the foundations for emotional problems by calling out unnecessary fits of temper, shortening the span of interest through too frequent interruptions, and limiting the child's opportunity to learn through curtailing his investigations.

A third procedure in guidance capitalizes the child's drive to do for himself by holding him responsible for what he does and thus setting the stage so that he can do many of the simpler routine activities for himself. Children thrive on carrying responsibility. Respect can perhaps in no other way be gained so easily. Through promotion of the growth of a sense of responsibility a firm foundation is laid of that much-coveted "inner discipline".

A fourth and well-established premise is that learning through doing is meaningful learning. Freedom to live in the enriched material and social environment of the nursery school gives the young child opportunities to learn in a spontaneous and

in an unplanned sequence, much more than any adult could set out to teach him in a clock schedule of planned activities. Again, the teacher is always on the alert to help emphasize these learnings as they occur in relation to real activities and to help the child to become selective in his choice of activities.

A fifth principle is to keep the environment alive or interesting and to make sure that it always has in it some challenge of task, experience or problem that calls out the best effort in emotional expression and control, and stimulates the child's intellect.

A sixth procedure is to base the day's programme on the "natural rhythms". Periods for activity, for rest, for elimination, for washing and for feeding, all have their proper sequence and cycle. Children thus are expected to sleep at a time when sleep is likely to be most acceptable, to be active when they are fresh, to eat when they should be hungry *et cetera*, all in an orderly fashion. Problems on all age levels are avoided when life is conducted on a natural and ordered schedule.

A seventh technique is based on the hypothesis that success is more stimulating to progress than failure. Whenever possible, approval is expressed rather than blame; moreover, in case of failure the opportunity to try again is provided, often immediately, even before the "spilt milk" is cleared away. With the wide range of facts already available to practitioners through the many researches in the maturation of abilities, and through the knowledge that many abilities develop in an orderly and predictable sequence, it is now possible to plan activities and materials with which a child at a given stage of development can be expected to succeed. Therefore, that situation of being pushed into something which is beyond our powers, which is so devastating to us all, and which causes us to develop alibis, to evade, prevaricate, borrow from another, blame or simply to give up, is in most instances unnecessary.

Eighth, ninth, tenth and *ad infinitum* are the following principles which determine procedures too numerous to expand; the most important only can be listed here. Learning from peers is more wholesomely digested than learning from preaching adults; for children social contacts from eighteen months on are desirable. Objective guidance can often best be given by someone who is not a blood relation or emotionally involved. Biologically perfect parenthood does not also mean psychologically informed parenthood. Ability in child guidance is doubtless a set of acquired traits; therefore parents need some help in this matter. Twenty-four-hour guidance of a very young child is strenuous physically, and after the first few hours legitimately boring mentally. Parents doubtless will be and certainly can be expected to be really good, patient, friendly and companionable humans for a few hours of the day; but spells of freedom, especially for the mother, from the clinging and demanding toddlers, are humanely necessary. The twentieth century small family, small home, small

garden, busy household have robbed our city dweller and often even our country dweller of the natural environment for child development that our grandmothers tell us was so perfect in their day. If we have really lost that good environment, then it might be possible to excuse the older generation for "naturally" thinking and occasionally expressing the idea that nursery schools are unnecessary frills and that children are better off at home, and their mothers with them.

Chief Objectives of the Nursery School.

To summarize the preceding techniques of guidance, and to state the facts again in the form of objectives of pre-school education, let me classify them under four headings, as stated by Mary Dabney Davis.⁽¹⁾

1. *Physical Development.* During the early years of the child's life physical growth and development are rapid and must be definitely safeguarded in the nursery-school environment. Opportunity for outdoor play and indoor activity that will develop and coordinate both the large and small muscles of his body and that induce deep breathing should be provided. The kind of activity and its duration should be carefully watched and the individual child protected against undue fatigue.

It is important to develop desirable attitudes toward the physical habits of eating, sleeping, and elimination which form the foundation for the child's optimal health and growth. He should become acquainted with and learn to accept a variety of foods and should participate rather than merely acquiesce in his daily health routine.

2. *Motor and Sensory Control.* The nursery-school covers that comparatively short period of time when sheer activity engrosses the child and when activity is of the utmost physiological importance to him; the use of large pieces of equipment must help to assure the child control over himself and his immediate environment.

Investigations and observations of the features of his environment are more naive and fresh than at any other time; it is essential then that the child have time for unhurried and undictated looking, listening and manipulation. Some of the skills desired include a control of the simple mechanical principles involved in such things as door knobs, steering gears of tricycles and wagons, discriminations in weights, colours, sizes, odours and facility in speech, singing, and play with tools.

3. *Social Adjustment.* Since awareness of other children and an understanding of how to play with others develop at different rates there must be provision for a young child to watch other children from the side lines for a time, at another time to make his contacts as fleeting as he will, and, as he arrives at a point of requisite preparedness, to become a responsible member of the group. Through his experiences he learns to respect others' rights, to maintain his own, to use language as a means of communication, and to have a direct quality in his dealings with adults and children.

4. *Development of Interest-Drives.* The perversion of interest-drives in many adults emphasizes the importance of developing normal, healthy, and spontaneous "drives" in young children. These "drives" are expressed in efforts to modify and to understand environment. They are pursued in the face of obstacles unless the individual is strongly conditioned against the drives. These interest-drives are developed through opportunities provided for the children to imitate, to choose, and to be occupied constructively; through opportunities to express feeling in language, dancing, dramatic play, and the use of plastic materials; and through surrounding the child with art, which expresses beauty, simplicity and integrity.

Consistency in the methods of guidance followed in the nursery school and in the home is essential to carry

out the foregoing objectives. It is consequently necessary to enlist the full cooperation of the children's parents, and therefore to add to the objectives for the nursery school certain objectives related to the education of the children's parents. To help parents to get the proper perspective of the young child's place in the family, to help them to know how to meet the problems of daily routine and those in unexpected circumstances, is a part of the nursery-school programme.

The Nursery School Day.

School is decidedly the wrong word to use in connexion with this newest child in the educational scheme. Fröbel's idea of child's garden, or in German, *Kindergarten*, a garden in which children grow, is a much better word. Unfortunately good words like that are few and far between, and the nursery school idea has suffered an unfavourable reception in the minds of those who have not actually seen it. School brings to the mind of a 1938 adult a picture of hard benches, rigid discipline, dampening of natural spirits and purposeless cutting and pasting.

On the contrary,⁽²⁾ the visitor's first impression on visiting a nursery school is one of a home-like, colourful place where a small group of children are independently, definitely and happily busy with alert but inconspicuous supervision from the teachers. Though programmes vary greatly among nursery schools according to the length of their day and the services which they are called upon to give, the programme provides periods for occupational activities and for the care of physiological needs, such as routine bathroom activities, eating and sleeping. The day starts at about 8.30 with a physical inspection at which the parent or person who brought the child to the school is usually present. There generally follow in sequence outdoor morning play, mid-morning fruit juice or water, short prone rest, toilet, indoor play, and at 11 o'clock preparation for lunch. Most of the schools include dinner, and following this the children have an afternoon two-hour nap. Just before 3 o'clock a light dinner is served and then the children go home.

If the visitor arrives with the children and their parents he will see that a physical inspection is made at once by a nurse or other trained person. This inspection is given as the children enter the school and before they have joined the group, so as to make sure that all are well and free from contagion of any kind, and to have those who show signs of possible illness return home with their parents for special care. At this time their parents report to the teacher any unusual incident that has occurred since the child left the nursery school the day before—incidents of unusual excitement, temper outbursts, food refusals, or disturbed sleep. These morning reports of nurse and parent largely determine the daily programme for each child. Frequently specific types of play are encouraged to strengthen muscular coordination, to activate sluggish muscles, to encourage social cooperation, or to increase skill in handling materials. Additional rest periods may be arranged, changes in diet may be made, quiet play away from the group may be planned, or the period of attendance at school shortened or lengthened as required.

After the morning inspection the children join a play group in the fresh air on playground, terrace or roof. Here they find an assortment of play apparatus that invites a wide variety of physical and social activities. The equipment usually includes ladders for climbing, balance boards, slides, packing boxes, small kegs, yard building blocks, a digging place of sand, dirt plot, or gravel pit, swings of various description, yard balls, locomotive toys, such a pedal "kiddle kar", tricycle, and wagons. Using such equipment brings into play the larger muscles of the body. Through muscular development these young children gain control over their bodies, rapidly gaining strength, courage and poise, which, it is

believed, carry over profitably into their behaviour and conduct. One child constructs his own gangway or slide, hoisting a plank or a small ladder against a big packing case. Each attempt in using it brings out new ideas and a new sense of power and control. Cautious creeping soon becomes a confident upright climb, and a change in the pitch of the plank or ladder results. Two children have climbed inside an empty furniture crate, and with a few tin dishes and a box have established a "house". Another child, riding a pedal car, "explores" a part of the yard somewhat concealed from the other children and comes back with a new feeling of independence.

Even within the two to four years' age range there are noticeable differences in the ways that children play. Children at three and a half and four are more socially inclined and are more apt to play cooperatively than are the two-year-olds. They use more material and seek more information. The older children's constructive play ceases to be purely manipulation of materials with haphazard or accidental outcomes. The child is now able to anticipate simple goals. A dramatic element is injected into his activity and he is able to reconstruct his experiences in tangible form with various types of building materials. He uses many of the realistic toys to make his project more representative.

The play environment is also equipped with materials to aid the development of smaller muscles, to provide sense training, imaginative and representative play, and opportunity to engage in creative adventures. Materials supplying these needs include dolls and doll house-keeping supplies, sorting and fitting games, plastic and graphic materials, building blocks of unit and multiple-unit sizes and of several forms, musical instruments, story books, pictures, growing things, and animal pets. The children conceive many and varied uses of this equipment. Other activities are suggested by the ways in which the teacher sets up the equipment, by her verbal suggestions, and through activities which she herself originates.

There are many opportunities for the teacher to help enlarge the children's vocabularies and to help them speak in phrases or carry sequence in their conversations. The innumerable questions are often bids for conversation as well as a thirst for information. Experiences comparable with those in adult life help the children to learn how to get along with other people. The child who is not wanted in a group of other children is not protectively imposed upon the group, but is helped to find his place where he is needed. The over-boisterous, dominating child learns to temper his energy and to wait for turns at the swing or to ask for toys instead of snatching them. The timid child is given a feeling of security and confidence, and that which a child fears is tenderly explored and is associated with something he enjoys until fear disappears and the necessary physical or emotional controls are established.

As a whole, play activities are interfered with as little as possible, and the teacher enters into the play when she sees a need for raising the educational level of the activity or sees an opportunity for capitalizing a learning situation. Daily records are customarily kept of the children's uses of play equipment and of individual progress and needs.

Certain routine activities necessary for adequate development of physical and mental hygiene habits are projected into the morning's play period. Frequent drinking of water is encouraged and a mid-morning drink of fruit or tomato juice is served informally. As soon as the elimination needs of each child are determined, a routine time schedule is established. The intervals of this schedule are increased as rapidly as control is established. A morning relaxation period is especially desirable for children under four.

At about 11 o'clock the visitor notes that the children begin to put their materials away. Toy shelters and an ample supply of low cupboard shelves are provided, which enable the children to put their things away independently and happily. The children then come indoors, go to locker rooms, where space is provided for each child, remove their wraps and hang them neatly in their own lockers. They learn to identify their lockers with individual gay picture tags of animals, birds, boats, trains, or other familiar objects. An identical tag also marks each child's

personal equipment throughout the school, such as his bed, blanket, towel, wash cloth, comb, toothbrush, mat, and chair. Preceding lunch there is a clean-up, toilet and rest period, during which the child has a drink of water, urinates, washes hands and face, combs hair, and rests on a bed or floor mat for 15 or 20 minutes. Sometimes the children look at picture books, or a period of listening to music is substituted for prone resting. In some schools a few of the children help to set the luncheon tables.

A hot dinner, the main meal of the day, with a menu planned by a nutritionist, is now served. The time required for eating averages about thirty minutes. The children sit at low tables, in groups of three, four or five, and one teacher. The chairs are adjusted to the size of the child, so that his feet may rest comfortably on the floor while he is eating. Each child unfolds and puts on his own bib. Dinner procedures vary from school to school. In some schools it is customary for the entire group of children to be seated for dinner at the same time, while in other schools the children enter the dining room in small groups at time intervals sufficient to allow each group to be served before the next group enters the room. In some schools one child from each table is elected to be the one to serve for the day. He carries the plate of dinner from the serving table to each child, and the small group around his table wait until all are served before they begin eating. In other instances the teacher of each group acts as hostess and serves the meal at the table. In still other situations the children never leave the table, but are served by the nutritionist or other staff member. The dinner service is gay and colourful, and the food daintily served. The diet is a simple one, comprised largely of eggs, meat or meat substitute, green leafy vegetables, fruit, milk, whole-wheat bread, and a simple dessert. The maximum amount of food is not offered on the first serving, but second servings are encouraged. According to the climatic location of the school, and upon the parents' desire, cod liver oil is served during the winter months. Some instruction is given in training in table manners. However, success in building right eating habits is of greater importance than the acquisition of social forms. To some extent the dinner is a social affair, but when conversation tends to interfere with normally quick and hearty consumption of food it is discouraged.

Records of daily food intake, behaviours expressed, and techniques used are made by the teacher. In most nursery schools a dietary study is made of each child. Frequent conferences between nutritionist and parent are held to ensure for the child a balanced diet and to make changes in diet according to temporary needs.

When the child has finished his meal he leaves the table, removes his feeder, puts it in a suitable place, and begins preparations for an afternoon nap. He washes his hands and face and then he undresses. Children at this age are learning to care for themselves to some extent in preparing for naps. They can turn faucets off and on, flush lavatories, use towels and wash cloths, and button and unbutton clothing. It is still necessary to give them some help, however, and a teacher is always at hand both to assist and to show the child how to help himself. If the nursery school is housed in one room, folding canvas-covered cot beds are used. These are stored when not in use. At nap time they are set up and usually spread with sheets and blankets. In order to provide for good posture during sleep the canvas is kept taut by lacing and the children sleep without pillows. When a separate sleeping room is available the cots remain stationary. The children are in bed for approximately two hours, but the amount of actual sleep ranges from one to two hours. After the nap—at about 2.30 o'clock—tables are again set for a light meal of biscuits and milk, which the children have as soon as they have dressed, washed their faces and combed their hair. By 3 o'clock the group is ready for play again. In the majority of nursery schools the children are called for by their parents at this time and walk in the parks or play at home until supper time. In schools which keep children for a later afternoon play period some change is made from the morning play

situation or activity. This may be a change of play space, an excursion, care for animal pets, or a story or music period, according to the plan of the individual teacher and the opportunities her set-up or location offers.

The teachers may use the lull during the afternoon sleep period to rest, complete their daily records, and record certain items on the sheet posted for parents. It is sometimes possible to have scheduled conferences with parents or to conduct a staff meeting.

Though the school day continues for a limited number of hours the school assumes the responsibility for knowing the complete 24-hour programme of the child. This secures for him a consistent school and home programme in guidance and self-help. The opportunity for assisting parents in understanding their children, by giving them information regarding child care and nurture, by giving them guidance in actual problem situations, and by attempting to achieve for the child an educational programme in which the home is the largest factor, is considered one of the serious responsibilities of the programme of nursery education.

Final Remarks.

It is important for someone to pick up the child from the time the family ceases to need the advice of the infant doctor or nurse until he comes to the attention of the school doctor or teacher at the regular school entrance age. This is apparent in any statistics we are able to gather. In general physical welfare we find among children a picture in their pre-school years of rapid increases in problems of nutrition, unsatisfactory dental conditions, posture, health in general and behaviour problems. The nursery school offers the community what many consider an ideal programme for solution of these problems. Already in Australia, through the work of the Free Kindergarten Unions, and much to the credit of the present Government, the Commonwealth Health Department has expressed its confidence in the nursery school movement by providing funds for the establishment of a model pre-school child development centre in each capital city and in Canberra in which a demonstration may be made over a five-year period in regard to protecting the health and promoting the growth of the young child, physically, mentally and emotionally.

The high level of service which has been established by the nursery school in doing the job of child development requires, in addition to the teacher, the cooperation of such specialists as medical adviser, preferably a paediatrician, nurse, expert in nutrition, and psychologist.

In actual practice the procedure in enrolling a child is as follows.

The school requires, if available, a medical statement from the family physician as to the state of the child's health, immunization *et cetera*. The school doctor then gives the child a general examination, preferably in the presence of parent or parents and teacher, and any defects or requirements are noted. The parent is always directed back to the family physician, the school doctor often getting in touch with the attending doctor to explain reasons for the child's being referred to him. When a reliable physician is employed by a family the school makes every effort to incorporate into the child's school programme any directions that are

necessary. This often is necessary in diet, rest periods, amount of outdoor play *et cetera*. The nursery school investigates the needs of children, but does not give the actual treatment. In dealings with the under-privileged group the community services of clinics and welfare agencies and charities are used. It aims never to duplicate services, but rather to coordinate effort and to help the parent to provide in the best way possible a good environment for the development of the child to his maximum ability.

Reference.

① Mary Dabney Davis, with the collaboration of Rowena Hansen: "Nursery Schools, their Development and Current Practices in the United States", Bulletin Number 9, 1932, United States Department of the Interior, Office of Education, United States Government Printing Office, Washington, 1933.

HÆMATURIA.

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Of the many signs and symptoms which suggest lesions of the urinary tract, none is more worthy of investigation or more malign in significance than the passage of urine containing blood. I would teach that hæmaturia should always be regarded as the result of a malignant growth which is just operable, until immediate, persistent and complete investigation leads to a diagnosis. The treatment of cancer of the urinary tract is rather less satisfactory than in other parts of the body, as so many growths may be "silent" or not accompanied by symptoms until operability is out of the question. In many cases, however, a warning in the form of symptomless hæmaturia is issued by Nature, and that warning may not be repeated for months or even years, so that the phase of curability is gone if the patient is put to bed and comforted and given potassium citrate, and a diagnosis such as strain is made. I am not exaggerating the position at all when I speak in this way, as in my practice patients treated on these lines are frequently coming forward. I would add that it is on the rarest occasions that a patient is referred by a medical man on the occasion of his or her first attack of hæmaturia. The conception that hæmaturia due to a neoplasm will persist and that if it does not persist a more benign condition may be presumed cannot be accepted. Growths may cause hæmorrhage that is continuous or intermittent, and the intermissions may be over years; the hæmorrhage may be painful or symptomless, and the pain may be a brisk colic or an ache in the loin. The blood may be dark or bright, mixed or terminal or clotted, or it may cause no more than "smoky" urine.

D. W. MacKenzie considered, in 1932, 11,065 patients admitted to the department of urology at the Royal Victoria Hospital, Montreal, and found that 2,240 complained of having passed bloody urine. Of these 2,240, about 75% suffered from the more

serious surgical disorders of the urinary tract, namely, infections, renal tuberculosis, tumours and calculi.

In 1936, Pierson, of Sioux City, investigated a series of cases of hæmaturia and found tumours in 37%; and of such growths carcinoma constituted 14%. The average bladder carcinoma had bled for 395 days before cystoscopy.

In many cases a patient sent for investigation gives a clear-cut history of gross hæmorrhage, or blood is obviously present in the specimen voided. In others the history is doubtful; but in all in which hæmaturia is suggested the use of the microscope is necessary to establish the presence of red blood cells in the urine.

Dukes, of Saint Peter's Hospital, London, in a consideration of the subject, has said:

The gualac test for blood is hardly ever positive unless the urine is red in colour, and experiment has shown that more than 10,000 red blood corpuscles must be present per cubic millimetre before this point is reached. The pyramidon and benzidine and spectroscopic tests are only positive when the urine is either obviously red or has a "smoky" tint, "smokiness" being reached only when the urine contains at least 1,000 red blood corpuscles per cubic millimetre. When less than 1,000 red blood cells are present per cubic millimetre no test other than the microscope will show the presence of blood.

Hæmaturia varies in type, and often the attendant symptoms, a careful consideration of a complete history, and an examination of the blood passed may suggest a correct diagnosis. An instance of this is when a young patient suffers a sudden renal or ureteral colic, passes blood and produces a small stone. A young male, obviously suffering from acute prostatitis, may pass a little terminal blood with terminal discomfort. A full investigation would in such cases not be necessary.

Several general rules are of assistance in suggesting a diagnosis. If the hæmaturia is profuse and symptomless, a bladder growth is most commonly found. If some of the blood passed is in the form of spaghetti-like moulds of the ureter, the lesion is most often in the upper part of the tract. In young patients the cause is more likely to be inflammation, stone or a mechanical factor, such as hydronephrosis, than growth. However, one cannot lose sight of the all-important fact that there are so many exceptions to these generalizations (and the occurrence of growths in young patients is one) that the duty of the surgeon is to seek the cause of the bleeding; and few exceptions may be made to the rule that hæmaturia demands diagnosis before any thought of treatment is entertained.

Classification.

The causes of hæmaturia are: (i) neoplasm, (ii) stone and occasionally foreign bodies, (iii) congestion due to infection or mechanical factors, (iv) trauma.

In a more detailed study I feel that light may be shed on the subject by a consideration of the more common lesions that occur in the organs of the tract, namely, the urethra, the prostate, the bladder, the ureter and the kidneys. Other organs may play

a part but rarely. Kümmell, in 8,600 cases of appendicitis, found three cases of hæmaturia, which he attributed to the effect of the inflamed appendix on the ureter. Medical conditions, such as nephritis, should always be diagnosed without instrumentation if all available facts are assessed.

Bleeding from the Urethra.

Hæmorrhage due to disease of the urethra generally occurs at the commencement of the act of micturition; in most cases it is due to infection. Malignant growths of the urethra are rare, as also are foreign bodies.

I once removed a small fish-hook from the posterior urethra of a young male. He was passing a little blood with the first specimen of urine. His motive in putting the hook in his urethra was obscure.

Innocent tumours are also uncommon, the only one of my experience being a hæmangioma in a female patient.

Granulomatous changes resulting in caruncle in the female cause bleeding. The diagnosis should be apparent.

From a congestive point of view, stricture of the male urethra and over-stimulation of the *verumontanum* in young males may result in slight hæmorrhage.

Bleeding from the Prostate.

Inflammation causing acute or subacute prostatitis, most often after a specific infection, provides the greatest number of cases. This bleeding is in small amounts, terminal and generally accompanied by pain.

Benign enlargement of the prostate causes hæmorrhage in two ways. In the first, generally with little or no residual urine, the final expulsion of urine results in the passage of a few drops of blood. In others a massive hæmorrhage occurs, and cases have been reported in which the gland has had to be removed to save the patient's life.

In one of my own cases the hæmorrhage after decompression was sufficient to make me open the bladder. Large veins coursed over the intravesical aspect of the prostate and from one of these a continuous stream of blood squirted across the bladder. It ceased soon after cystotomy.

Young has stated that carcinoma of the prostate causes hæmaturia in about 3% of cases.

I recently saw a patient who was passing urine about the colour of port wine. This was due to a soft, highly cellular carcinoma of the gland, the diagnosis being made by a microscopic examination of the debris expressed by rectal pressure.

Prostatic calculi do not often cause hæmaturia.

Bleeding from the Bladder.

Tumours are unfortunately a common cause of hæmaturia. The vast majority are epithelial in origin. In Fifield's series of 306 consecutive cases at the London Hospital, 151 were papillomata and 155 carcinomata. All are rare in persons aged less than thirty years, and carcinomata become more common as the age of the patient increases. Hæmaturia is the most common symptom of papilloma, and in such cases is generally not associated with pain.

and is intermittent and profuse and not associated with other vesical symptoms. In Fifield's cases there was only one exception to this rule. He said: "... two to three days the average length of an attack of bleeding. Several months was the usual periodicity. The attacks progressed, the intervals diminished.

When cystoscopy is being carried out it must be remembered that multiple papillomata often occur. Haemorrhage is almost as common in carcinoma of the bladder, occurring in 88% of Fifield's cases. To quote Fifield:

It resembled that of papilloma, but the average length of history was shorter (one year), the attacks were usually longer, the intervals between the attacks were shorter, and the condition more rapidly progressive. Bleeding occurred in all the papillary carcinomas and was practically always the first symptom. Although present in about two-thirds of the infiltrating type of carcinoma, it was usually a relatively late symptom and often slight in amount.

Carcinoma differs from papilloma in that an associated cystitis is present in nearly half the cases and pain is present in the majority.

Swift-Joly admirably summed up the position in connexion with carcinomata when he said: "early cystoscopy is the only means of reducing the proportion (now over 60%) of growths inoperable when first seen".

Early diagnosis, too, is stressed on the findings of the Carcinoma Registry of the American Urological Association in 1936. The prognosis was found to be related to the size of the tumour in that, when it was less than two centimetres in diameter, 30% of patients were alive after five years, and when it was over two centimetres only 15% were alive.

Stone in the bladder may cause haematuria, particularly if there is little or no residual urine. The haemorrhage is most often terminal and so, too, is the accompanying pain. It is greatly lessened or stopped by rest and is aggravated by jolting or exercise. Cystitis is often associated. The condition generally is much less common in female patients. With residual urine haematuria is not so common.

Foreign bodies must not be forgotten. The signs and symptoms are those of a vesical calculus. The patient is often introspective and imaginative and possibly optimistic.

Inflammation of the bladder is easily the commonest cause of blood in the urine. The haemorrhage is rarely great in quantity, and occurs most often at the end of micturition. The association of frequency of micturition, dysuria and terminal haematuria in a patient under thirty years of age is almost sufficient for a positive diagnosis. However, in an account of the occurrence of conditions demanding surgical intervention for cure, with some or all of these symptoms, I do not consider it justifiable to institute treatment designed other than to relieve the patient of his acute distress before carrying out a full urological investigation.

It must not be forgotten that hexamine will occasionally produce dysuria and haematuria.

Bilharziasis of the bladder will cause bleeding, and actinomyces has been reported to do the same.

Trauma may cause contusion or rupture of the urinary bladder; and at the same time may be mentioned rupture of the urethra. The history, with signs of bruising and extravasation of urine, demands surgical judgement and action rather than instrumental investigation.

Bleeding from the Ureters.

The commonest cause of haemorrhage from the ureter is stone, which may cause severe colic, a mild discomfort or no sensory disturbance at all. The accompanying colic may vary in situation; but in many cases distinction from a renal lesion is impossible without investigation. X ray examination is frequently of little help; even ureterography may not clinch the diagnosis. In one type of case the diagnosis is difficult, namely, that in which the patient suffers from a renal or ureteral colic and passes blood, and no stone is detected on examination nor is one apparently passed. Another investigation in three months is the ideal, but in the absence of further symptoms it is often not possible.

Neoplasms of the ureter are rare; but papillomata and carcinomata occur. In the former haemorrhage is constantly present; in the latter it is less common and the symptoms are generally of renal obstruction.

Hunner, in his work on ureteral stricture, suggests that the term "essential haematuria" should be abolished, as stricture, which is generally unrecognized by other clinicians, is a frequent cause of bleeding in his practice. The problem would not appear to be of such ready solution.

Bleeding from the Kidneys.

Bleeding of renal origin may be symptomless or accompanied by pain. It may be constant or intermittent, profuse or scanty. Before I pass to surgical conditions demanding full investigation, a word of warning may be uttered that medical causes should not be overlooked. The presence of albumin, casts, possibly oedema and a raised temperature should enable one to make a diagnosis without the necessity of further investigation.

Neoplasms of the kidney cause haematuria. Thomson-Walker stated that haematuria was present in 90% of cases and was the first symptom in over 70%. Hinman states that an initial haematuria occurs in less than half the cases. When bleeding occurs, it is spontaneous, intermittent and little affected by rest. Renal and ureteral colic may occur if bleeding is profuse, on account of clot formation.

All statistics in connexion with newgrowths of the kidney make dismal reading. Thomson-Walker found, on investigation of a large series, that recurrence occurred in 60% of cases, the majority of these being in the first post-operative year. Hyman, quoted by Hinman, stated in 1928 that the average of five-year cures was not over 15% in tumours of the cortex.

Hand and Broders investigated 193 cases of neoplasm of the renal cortex which had occurred at the Mayo Clinic. Haemorrhage occurred in 96;

and the average duration of symptoms before operation was two years. Eighty-nine patients died within two years of operation.

Newgrowths of the renal pelvis cause hæmorrhage in about 70% of cases; but it would appear that the warning is unheeded just as often.

One might continue to quote statistics at length, but only to this purpose, that hæmorrhage suspected of being or found to be of renal origin must have its cause made clear. In the state of our present knowledge many renal growths will never be diagnosed during the operable stage, because the necessary signs and symptoms may be entirely absent. Many cases will prove to be inoperable at the first hæmorrhage; but until the period of two years that elapsed in one series can be reduced to two weeks as a general standard, many patients will be condemned to death. Bilateral retrograde pyelography cannot be avoided as a rational diagnostic measure.

Hæmorrhage due to calculus disease of the kidney is probably more common than any other form. Diagnosis is, generally speaking, not a matter of great difficulty and, on account of the frequently associated colic, is made early. Stones consisting mainly of uric acid present difficulties, but should be detected by the use of various contrast media, such as solutions of sodium iodide in different strengths, in performing pyelography. Neoplasms of the renal pelvis occur occasionally in conjunction with stones. I presume most are discovered accidentally.

Most infections of the renal pelvis do not cause apparent or naked-eye hæmaturia, yet red cells are present, together with pus and epithelial cells, in the majority.

Renal tuberculosis results in bleeding in 44% of cases, according to Henline, who analysed a series.

Hydatid disease of the kidney is not very common, and although hæmaturia occurs on rupture of the cyst or cysts into the pelvis, it cannot be regarded as an important diagnostic symptom.

Hydronephrosis is most often accompanied by bleeding when the condition is associated with colic or crises. Generally speaking, the degree of dilatation is not very great, and the muscular elements of the organ still retain the ability to go into spasm in an effort to overcome the obstruction. A low or floating kidney, or one with an aberrant vessel at the pelvi-ureteral junction, commonly bleeds during this spasm.

In some cases polycystic disease causes hæmorrhage which is slight and intermittent. Diagnosis can generally be made after physical examination and cystoscopy and an estimation of renal function. Pyelography is a confirmatory measure.

Trauma of slight degree is more likely to produce hæmaturia from a kidney already the site of neoplasm, polycystic disease, calculus disease and hydronephrosis or pyonephrosis.

I once saw a young healthy male who passed blood for several days following a boxing contest. He was hit several times over one kidney. Full investigation subsequently revealed no abnormality.

Gross hæmaturia, with an area of increasing dullness in the loin, occurs when a kidney is torn as a result of an accident.

Essential or idiopathic hæmaturia is a diagnosis which varies in frequency inversely as our persistence in seeking a cause for the bleeding. Cases are encountered in one's practice from time to time in which profuse and intermittent bleeding from one kidney occurs. Repeated examinations reveal no diagnostic pyelographic features, and in many no renal abnormality. Thomson-Walker explored thirteen such kidneys and examined the tissue removed. Cortical patches of fibrosis were a constant finding.

In 1933, Rathburn, of New York, commented on and analysed a series of cases of hæmaturia. Of 203 cases, eight were at first classified as "cause undetermined". In five further study and follow-up suggested a definite diagnosis. In two no follow-up was possible and no diagnosis was made. In one case nephrectomy for gross hæmorrhage was performed. There were several scarred areas on the cortex, which showed fibrosis, lymphocytic infiltration and hyalinization of the glomeruli.

I recently removed a kidney for severe bleeding, having made a provisional diagnosis of neoplasm. On section the only abnormality found was some cortical areas of fibrosis with lymphocytic infiltration. No satisfactory explanation of this type of case has been made.

Trional and sulphonal have been reported as drugs that will cause renal bleeding. In cases of obscure origin various pathological changes have been suggested, such as varicosity of the papillæ, acute glomerulitis and an angiomatous condition of the pelvis. In hæmaturia accompanied by pain I believe many cases are due to crystalluria, or the passage of crystals of various types down the ureter.

Summary.

1. Hæmaturia is a symptom of serious import, and no delay should take place in its full urological investigation.
2. Neoplasms are an important cause, and treatment can hold out prospects of cure only in the early stages.
3. The term "essential hæmaturia" should be discarded and failure to find the cause of the bleeding regarded as a confession of ignorance.

GOITRE AND THYREOTOXICOSIS.¹

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ALTHOUGH the subject is one concerning which almost countless articles and addresses have been published in recent years, little apology is needed for yet a further presentation of the subject. In this part of Australia goitre is a common condition, and an important condition, and one presenting

¹ Read at a meeting of the Queensland Branch of the British Medical Association on April 1, 1938.

itself in various guises to different observers, and moreover it is a condition which, especially as regards its pathology, has been much simplified since most of us were students.

The first point I should emphasize is that when we speak of goitre and of thyreotoxicosis we are considering two quite different things. A goitre signifies a swelling in the base of the neck due to enlargement of the thyroid gland, and means nothing else. This sounds simple enough, but was not recognized by a certain resident medical officer, not long ago, who, when asked by a patient whether she had a goitre, replied: "I cannot tell until we carry out a breathing test."

Thyreotoxicosis, on the other hand, is a general bodily state which in part simulates the effects of overdosage with thyroid secretion, and for this and other reasons is therefore surmised to have some relation with the thyroid gland.

Goitres are presented to the clinician in very varying forms; but the lesson the newer pathology of these states teaches is the essential unity underlying these apparently different disease processes. Such states can be shown to be always the result of a disorder in the hyperplasia-involution or the activity-rest rhythm of the thyroid gland.

The thyroid gland regulates the rate of metabolism in the body. Its activity is altering constantly to meet the requirements of normal life, according to the needs of the person who is in a varying environment, and is called upon to perform many functions demanding different expenditure of energy.

Histologically the thyroid apparatus consists of acini lined with secreting epithelium and containing colloid. Increase of activity causes hyperplasia of the epithelium, growth both in size and number of cells, and diminution of the acinar cavity, together with partial or complete disappearance of the colloid. There is a great infolding of the proliferated epithelium, which projects into the acini in the form of large papillary processes (like branching trees). Cessation of activities causes regression of this epithelial activity, an involution process, together with the reappearance of colloid within the acinar lumina. During life, then, the thyroid gland, in response to varying stimuli, illustrates an alternation of hyperplasia and involution. Stimulation of varying types, chemical, bacterial and psychic, tends to induce hyperplasia. When the action of these ceases, involution sets in. The gland that has undergone involution may again become the seat of hyperplasia followed again by involution.

If in normal animals a sufficient portion of the thyroid gland is excised, the remainder enlarges and the amount of colloid is diminished. This is an example of work hyperplasia. If a complete gland is inefficient, or the demand upon it is excessive, it responds in the same way by increased activity, accompanied by demonstrable enlargement. One cause of such inefficiency is a deficient supply of iodine, which is an essential constituent of its secretion. This again is an example of work hyper-

plasia in an inefficient gland. If in a community such iodine deficiency in the soil, and through this in the food intake of the people, is widespread, such enlargement, at times when a special call for thyroid secretion exists, as at adolescence, becomes frequent and endemic goitre is produced. After a cause of increased activity ceases to operate, the gland may not return to the normal state of the resting gland, that is, the process of involution may be faulty and groups of enlarged vesicles may remain, distended by colloid and lined by flattened epithelium. When a large part of the gland is thus affected, colloid goitre is produced. Colloid goitre is therefore the result of faulty involution following a phase of increased activity with hypertrophy and hyperplasia. If the gland is stimulated repeatedly, so that alternating phases of hyperplasia and involution occur, numerous areas of colloid distension, separated by areas of normal vesicles, may remain as a result of faulty involution. In time the areas of colloid distension by their increasing size compress the gland tissue surrounding them, and this, together with newly formed fibrous tissue, causes them to become encapsulated. Again, but much more rarely, during the process of involution certain areas may fail to return to the resting phase, but remain in the state of hyperplasia and also become encapsulated. And thirdly, various degenerations may occur in encapsulated areas, causing hæmorrhage, cyst formation, mucoid degeneration or calcification. In these ways nodular goitre is produced, such nodularity being the result of faulty involution following repeated stimulation.

Simple Goitre.

Simple goitre, then, embraces these groups: (i) swelling through work hyperplasia in an inefficient gland, (ii) swelling through faulty involution after activity (general or colloid goitre, or localized or nodular goitre).

Simple Endemic Goitre.

Assuming that the inefficiency that produces the first goitre type is present from birth, as in iodine deficiency in the food or water, the swelling presents itself commonly during the child's first phase of continued thyroid activity, during the adolescent years. It is symptomless unless by its size or by its position within the mediastinum it produces pressure symptoms, and the patient exhibits either no evidence of disordered thyroid secretion, if the hyperplasia provides complete compensation, or a mild subthyroid state if compensation is incomplete.

Treatment is simple and is essentially medical. It consists in: (i) modifying the excessive demand by an appropriate modification of the patient's environment and by removing any infective foci which might seem by their presence to be lowering glandular efficiency; (ii) remedying the cause of the thyroid inefficiency by supplying an adequate amount of iodine; or (iii) reducing the gland's work by the addition of thyroid substance by mouth.

Colloid Goitre.

Typical colloid goitre is not seen much here, but is common in endemic areas. Coming as it does at the end of a period of activity, it is seen typically in young adult women. It is usually symptomless and rarely causes pressure symptoms. Operation can be advised only for æsthetic reasons, and should never be pressed upon the patient. The fault in involution frequently leaves the patient with mild subthyroidism, and a little thyroid substance may be indicated.

Nodular Goitre.

Nodular goitre comes into another category. It is the result of an involution fault, after repeated phases of activity, and in the absence of a sufficient environmental explanation for this repeated activity, one may assume that some internal stimulus to activity is present. A nodular goitre therefore does not represent a completed state, but a phase of a continued process in an unstable thyroid apparatus, where activity and overactivity alternate with rest. An inactive nodular goitre is a rest phase of a fluctuating thyreotoxicosis. For this reason and because operation in a resting stage is desirable, the patient with nodular goitre should be advised to submit to thyroidectomy. Such an operation must be bilateral subtotal thyroidectomy. Remember that, except in rare cases, the nodules represent permanently resting tissue, and the fluctuating activity occurs in gland tissue other than the nodules. Removal of nodules alone is therefore worse than useless.

Many patients with nodular goitre are seen who have been given iodine for long intervals in the belief that such treatment is a rational method of attempting to reduce the size of the gland. As will be shown later, the effect of iodine is to bring the gland closer to the resting phase and to produce colloid storage. Since the nodules are encapsulated areas of gland already in a quiescent state, there can be no prospect that any treatment which causes increased colloid storage will further diminish the size of the gland. Any change in size will rather be towards further enlargement.

Thyreotoxicosis.

So much for simple goitre, a relatively easy problem. Compared with this the problems surrounding thyreotoxicosis are of outstanding difficulty. Its very definition is open to criticism. A recent authoritative article describes toxic goitre as all forms of thyroid disease in which there are signs of hyperthyroidism, and regards the term as including exophthalmic goitre, toxic adenoma and nodular toxic goitre. Such a definition implies an active form of disease in the thyroid gland as an essential feature of the process. Yet there is much evidence that such is not the case, but that the thyroid apparatus is overworked in response to persistent extrathyroid stimulation.

A pituitary control of the thyroid has been shown to exist in animals, and Loeser in particular, by constantly increasing the dose of thyrotropic (pituitary) hormone, has been able to produce in

certain animals a state identical with exophthalmic goitre in man and terminating in death. The clinician is wise to be sceptical as to whether such animal experiments have any real relationship to spontaneous disease processes in human beings. At the best such an explanation only places the site of abnormal stimulation in the pituitary instead of the thyroid gland. The cause of the stimulation remains unknown.

A suprarenal relation to the thyroid is also a certainty, and some surgeons, in particular George Crile, believe that an operative procedure on this gland, usually bilateral denervation, is as efficient a method of controlling thyreotoxicosis as is the more usual thyroid operation.

Nevertheless it is my own feeling that in our present state of knowledge thyreotoxicosis should be regarded as a primary disorder of the thyroid. We can then suppose that whereas the majority of thyroid glands respond to the varying stimulation of everyday life without either increasing in size or overacting in response to stimuli, there is a certain group of people in whom the thyroid apparatus is unstable. This seems particularly the case in the nodular goitre groups. Both the rest and activity stages are overdone, in that the resting stage is often interfered with by defects in involution, while stimulation (apparently not exaggerated in degree) results in an exaggerated activity which continues long after the stimulation has ceased. In favour of such a thyroid source for thyreotoxicosis may be mentioned: first, the results of thyroidectomy, if we imagine subtotal removal of the gland as a stabilizing mechanism; secondly, the inability to find a continuing stimulation factor outside the gland; thirdly, the very small doses of thyroid which shift the balance in these patients after operation; and fourthly, certain observations of E. S. J. King on the Golgi apparatus in the thyroid epithelium in thyreotoxicosis. King has shown that this apparatus, which in secreting cells is placed distant from the secreting surface, is reversed in a certain proportion of the cells in toxic goitre. This would suggest that these abnormal cells secrete thyroxin directly into the blood stream, and might explain the overactivity of such glands in response to normal stimulation. However this may be, there can be no doubt that the mechanism of thyreotoxicosis consists in a persistent oversupply of its normal product thyroxin (as someone has said, a diarrhoea of secretion occurs); and in addition, particularly in the primary thyreotoxicosis group, or exophthalmic group, a persistent stimulation of the sympathetic nervous system.

Thyreotoxicosis, then, as regards the thyroid gland itself, is met with under three forms: (i) exophthalmic goitre, in which the present attack constitutes the first instance of thyroid overactivity, and in which the histological picture is one of universal hyperplasia; (ii) nodular toxic goitre, in which multiple nodules represent abnormal forms of involution in a gland which has undergone fluctuating changes in activity, and in which the

present thyreotoxic phase represents activity in the internodular tissue; and (iii) much more rarely, single nodular goitre, or toxic adenoma, in which sometimes at least the activity seems to be represented by hyperplasia in the nodule itself. This condition represents encapsulation of a hyperplastic portion of gland rather than a newgrowth or true adenoma.

Signs and Symptoms.

The signs and symptoms of thyreotoxicosis fall into several groups, which may be classed broadly as: (i) the increased metabolism group, (ii) the circulatory group, (iii) the sympathetic group.

The Increased Metabolism Group.—In thyreotoxicosis, as in experimental feeding with thyreoid, thyroxin excess results in an increase in the basal metabolic rate, a fanning of the fire of bodily function into increased activity. This is manifested clinically by a loss in weight on a normal or increased diet. The skin becomes hot, and sweating is profuse; and for this reason the patient suffering from thyreotoxicosis dislikes hot weather and also feels more ill in the hot weather.

Estimations of the basal metabolic rate show a rise of from 20% to 80%. This rise does not parallel the severity of the symptoms, and it is the experience of all who have seen much of this disease that estimation of the basal metabolic rate does not provide as accurate information of a patient's condition as does a skilled clinical appreciation. There is in addition a general weakness of voluntary muscles, with rapid onset of fatigue.

The metabolic group of symptoms then are: (i) loss of weight, (ii) hot skin, (iii) muscular fatigue.

Circulatory Disturbance.—The circulatory disturbance of thyreotoxicosis consists of a rapid heart action and an increased awareness of heart action. The heart exhibits a rapid and vigorous beat, as in healthy persons after great physical exertion. There is a high pulse pressure due to a raised systolic with normal diastolic pressure.

The state of the heart is due primarily to persistent overwork, and though this may lead to such disturbances of cardiac rhythm as auricular fibrillation, followed by congestive heart failure, a removal of the abnormal drive may still allow the regaining of quite normal circulatory efficiency. In long-continued thyreotoxicosis, however, particularly in elderly persons, this persistent overactivity may induce the changes of old age in a heart long before its time, and evidence of cardiac degeneration is thus obtained.

The increased awareness of heart action manifests itself in a rapid palpitation, which becomes so uncomfortable to the patient as to prohibit muscular activity.

The Sympatheticotonic Symptoms.—The sympatheticotonic symptoms of thyreotoxicosis are much more obvious in the primary group than in nodular toxic goitre. The exophthalmos, which may appear with the greatest suddenness during the course of the disease, is probably due to this mechanism, though the actual method of its persistence seems

to be by the production of a persistent oedema of the tissues within the orbit. As examples of unstriated muscle stimulation may be mentioned the gastro-intestinal upsets and the flushed, sweating skin. To this medium also may be ascribed associated endocrine disturbances, such as the amenorrhœa which frequently accompanies the disease, the sensitization to adrenaline, and the occasional persistent high pulse rate, which remains after the most radical thyreoidectomy. Here we are dealing surely with a predominant suprarenal mechanism. But the most common and the most obvious of the sympatheticotonic symptoms is the change in the nervous system in the direction of an increased nervous irritability and excitement.

In severe thyreotoxicosis this condition of excitability and restlessness is associated with all the symptoms of acute fear, and it is seen in its most complete form in the acute thyreotoxic crisis, whether spontaneous or post-operative.

Summary of Symptoms.—Summarizing, then, the symptoms of toxic goitre, we may say that this is a disease which in its active phase is associated with: (i) increase in metabolic rate, resulting in loss of weight on a normal or increased diet, a hot skin and muscle fatigue; (ii) rapid and vigorous heart action, palpitation, and shortness of breath on exertion, often leading through auricular fibrillation to congestive heart failure; (iii) restlessness and nervous excitability, sweating and exophthalmos.

As presenting themselves to the surgeon, the thyreotoxic patients fall into the following groups:

1. Patients with nodular goitre in an active phase. Often approaching middle age, these patients have knowledge of the existence of a goitre extending back many years, perhaps to adolescence. Disliking the summer, in previous years they may have lost weight excessively in hot weather and found themselves less capable at these times of carrying on their usual duties. The onset of the present phase of activity may have been associated with hot weather or with general infections, but much more often with persistent worry and anxiety. During times of economic stress many persons with old nodular goitres first exhibit signs of hyperactivity. In such patients weight loss and circulatory symptoms are much more obvious than the sympatheticotonic group of symptoms.

2. Patients with primary exophthalmic goitre. The patients of the second group, as the surgeon sees them, are of the primary exophthalmic goitre type. The shortness of the history, the enlargement of the thyreoid gland only in relation to the toxic symptoms, the exophthalmos, and other gross sympathetic stimulation effects, are the distinguishing features in this group.

3. A group with predominant cardiac symptoms. Patients of this group are seen primarily by the physician when the association of failing circulation with persistent overwork of an otherwise normal heart, the presence of a small nodule in the thyreoid gland, and the signs of increased basal metabolic activity, enable the alert clinician to make the

correct diagnosis. The importance of such a correct diagnosis cannot be overstressed, as it gives hope for the complete restoration to health of persons otherwise doomed to a death from congestive heart failure. As has been stated earlier, in the more elderly group the metabolic activity may hasten the natural aging processes in the heart, and cardiac degeneration may then be present.

4. A psychotic group. This again represents an important group, the patients of which are most often seen primarily by the psychiatrist. Although the psychosis is more commonly of the manic type, other forms may be seen. Probably thyreoid over-activity tends to push a patient towards the type of mental disturbance to which he is predisposed. I have seen several cases of profound melancholia in which the discovery of associated thyreotoxicosis enabled the correct treatment to be carried out and the patient to be restored to complete mental and physical health. Operation should be undertaken whatever the type of psychosis, providing the signs of thyreotoxicosis are clear; and it cannot be too strongly urged, in opposition to the statement of Romanis and Mitchiner, that the melancholic group may be cured as well as the manic group.

Differential Diagnosis.

Although in many cases the diagnosis of thyreotoxicosis does not present much difficulty, yet there are certain conditions which must be clearly distinguished from it. In particular the following groups must be noted: (i) the association of simple goitre with neurotic states; (ii) with or without goitre, the presence of sympathetic overactivity from other causes, particularly from anxiety states; (iii) with or without goitre, other causes of persistently raised pulse rate, and particularly low-grade infections and functional cardio-vascular states.

A decision in any of these groups may be of surpassing difficulty; but in general it may be said that the better the mechanism of symptom production is understood and the thyroxin excess group of symptoms distinguished from the sympatheticotonic group, the less often will mistakes be made. Thus the anxiety patient may exhibit the fear, the nervous excitability, the rapid heart, the inability to work, the tremulousness of the patient with toxic goitre; but he lacks the indubitable evidence of increased metabolic rate, the loss of weight with normal appetite; and rapid heart rate is not associated with high pulse pressure and the other evidences of the overworking heart of the thyreotoxic group.

It might be thought that in this group estimation of the basal metabolic rate would find its greatest value; but experience does not confirm this. It is so difficult to place the anxiety patient in a state in which a true basal metabolic rate may be determined that the limits of normality have to be extended to a height where they merge with the readings of the moderately thyreotoxic group. The skilled clinical analysis provides a more accurate guide, and the basal metabolic rate must conform

to such findings before it can be accepted as an accurate indication of the patient's state.

The same may be said of other causes of persistently raised pulse rate, that though in some respects they simulate thyreotoxicosis, a thorough investigation, and in particular repeated examination of the patient, will show significant differences in detail which enable their exclusion from the thyreotoxic group to be made.

The Course of the Disease.

I know no more graphic description of the course of this disease than is found in Boyd's "Surgical Pathology", and I make no apology for quoting from it:

The course of the disease varies. It may be of an acute and fulminating type, the patient dying of the disease itself, with symptoms of acute hyperthyroidism, cardiac dilatation, wasting, exhaustion. Such cases accord with the classical picture described by Graves. Other cases pursue a less violent course, and are marked by a series of remissions and exacerbations, the histological counterpart of which is involution and hyperplasia. Finally there are still milder examples of hyperthyroidism which differ from acute Graves' disease in degree rather than in any essential qualitative measure. In these cases adenomatous nodules are apt to develop as the result of involution, and such cases have been classed as toxic adenoma by Plummer and his followers. Closer investigation has shown that these cases do not differ from true exophthalmic goitre in any essential detail, clinically, histologically, or in their response to iodine.

The disease is more or less self-limited. The fire burns itself out, the thyroid breaks down under the constant stimulation, degenerative changes follow, and a partial condition of myxœdema or thyroid insufficiency may develop. By the time the thyroid has ceased hyperfunctioning many of the vital organs, particularly the heart, have been permanently damaged and the patient is merely a wreck and a permanent wreck of his former self.

The Treatment of Thyreotoxicosis.

Dealing as we are with a disease in which remissions and exacerbations occur, treatment during a phase of activity embodies two requisites: (i) production of a remission, (ii) prevention of further phases of activity.

Except in early and mild cases, these two requirements should be fused, in that production of a remission is sought so that the prevention of future activity may be more safely achieved by thyreoidectomy.

Rest is the first requirement. It is best achieved in hospital, and part at least of the rest before operation must be in hospital. Sedatives are essential, and I doubt whether any more valuable than a simple chloral hydrate and potassium bromide mixture, given three or four times a day, can be used. A generous mixed diet of good protein content should be provided. In all severe cases iodine in the form of Lugol's solution should be given. A dose of 0.3 to 0.6 mil (five to ten minims) three times a day is ample.

All factors producing worry should be corrected as far as practicable. The effect of iodine administration is to produce a partial remission of the disease from about the tenth to the twentieth day. If it is continued the effect soon becomes lost, and about four months' cessation is necessary before the

iodine effect can be regained. For this reason it is important that the administration of iodine should be so regulated that operation can be undertaken during the favourable phase. My custom in this matter is as follows. In the milder cases I give no iodine, but arrange for the patient's admission to hospital a few days before the intended operation. Sedatives alone will prepare patients in this class quite adequately. In a more severe group iodine is started one week before the arranged date of admission. After admission the patient is kept asleep or drowsy for a further week with a mixture of chloral and bromide, and the administration of iodine is continued.

The decision when to operate is made on the clinical findings, particularly the fall in the pulse rate and the loss of the attitude of fear. It is only in exceptional cases that operation cannot be safely undertaken within two weeks of the patient's admission to hospital or within twenty days of the commencement of iodine administration.

The handling of the extremely severe group is a matter wherein each patient must receive constant and prolonged individual attention. The questions of whether to operate, when to operate, and what to do form a specialized problem hardly fit for discussion at a general meeting such as this.

I do not propose to say much concerning the actual surgery of thyrotoxicosis. Whatever be its mechanism, all are now agreed that removal of sufficient thyroid tissue will cause an immediate and permanent remission of the disease. With modern methods of preoperative preparation and operative technique this can be achieved with a high degree of safety.

Three small groups only in my experience still cause the surgeon worry, and present-day mortality lies exclusively within these groups. These are as follows:

1. The very ill members of the primary exophthalmic group, in whom acute fear predominates and cannot be controlled by sedation. This is the group in which the post-operative crisis may be expected.

2. Some severe nodular toxic goitres in which iodine has been administered for periods of months or years. In this group the usual fall in the pulse rate with rest and sedation is difficult to obtain, and though I do not subscribe to the frequent statement that these patients have special operative difficulties, yet they do seem to have a more stormy post-operative course than might be expected from the clinical appreciation of their severity.

3. The elderly cardiac group. Although the surgery of the cardiac group of patients with thyrotoxicosis provides some of the most gratifying results one can find in the whole realm of surgery, yet these operations are undoubtedly risky when performed on elderly patients. In my personal experience one death occurred from coronary occlusion and another from some other acute circulatory disorder; and in the surgery of thyrotoxicosis, where very long series of operations are

performed without mortality, two such post-operative deaths loom large. These patients presumably belonged to the cardiac degeneration group, and if they could be recognized before operation, the surgeon would perhaps be well advised to exclude them from the possible benefits of operation. Yet if he did so, he would undoubtedly refuse the possibility of dramatic improvement to more patients than he was likely to lose by operation.

In association with thyrotoxicosis, the question of a relation to focal sepsis is often discussed. In my opinion chronic infections have little or nothing to do with thyroid overactivity. Their influence is rather to dampen glandular activity, and in post-operative cases this can be frequently observed.

On many occasions I have noticed that the small fragment of gland left after operation is adequate for the ordinary needs of the patient, but that definite symptoms of myxœdema develop in association with either acute or chronic infections, such as colds, influenza *et cetera*.

Certain it is that if the treatment of focal infections is contemplated in thyrotoxicosis, thyroidectomy must come first. Even tooth extraction has, in my experience, caused a severe exacerbation of symptoms; and on several occasions I have seen tonsillectomy precipitate the demand for thyroidectomy for a patient previously regarded as suffering from mild thyrotoxicosis only.

A consideration of post-operative myxœdema is a reminder of the differences between this disorder and spontaneous myxœdema. In his determination to abolish with certainty and for ever the symptoms of thyrotoxicosis the surgeon must frequently make his resection so radical that some evidence of sub-thyreoidism occurs. Whether such a state will occur depends largely on the age of the patient as well as on the quantity of gland removed, the younger the patient the more likely being the occurrence of post-operative myxœdema. In the later decades of life even total thyroidectomy, in my experience, produces no recognizable symptoms of hypothyroidism, and I have now patients who have not needed the administration of thyroid for two years and more after such complete excisions.

The subthyreoidic state also is quite slow in its development, and commonly several months elapse before symptoms appear. It fluctuates with the normal thyroid activities, and in summer is less obvious than in winter; and, as stated above, it is made worse by infections. And finally, the doses of thyroid necessary for its control must be measured within very narrow limits.

Quite severe signs of post-operative myxœdema may be completely relieved by the administration of perhaps 0.06 or 0.09 gramme (one or one and a half grains) of dry thyroid a day, while 0.12 or 0.18 gramme (two or three grains) provokes the clearest evidence of renewed thyrotoxicosis. Can this be evidence of the instability of the thyroid apparatus postulated in an earlier part of this address?

The scope of my subject tonight is so vast that I have omitted any reference to the technique of thyroidectomy. Each surgeon must work out for himself a technique satisfactory to himself and to his particular surroundings.

My hope has been that by this paper I may stimulate those who see patients with thyrotoxicosis infrequently to a renewed interest in the subject, and especially to a search for its presence in conditions in which it is not quite obvious, but in which its recognition may enable the most dramatic improvement to be produced in their patients.

Reports of Cases.

DEATH FROM ARTERIAL SPASM.

By JOHN F. J. CADE,
Bundoora, Victoria.

I REPORT this case because of the apparently unique mode of death and in the hope that others may have encountered a similar occurrence and be able to shed some light on the mechanism of death in this instance.

E.V.M. had been a mental hospital patient for the previous six years. She appeared to be about fifty-five years old when she died. Her record stated that she was thirty-four, but the truth of this is extremely doubtful. Her mental state was one of mild mental deficiency, probably of congenital origin. She lived a vagrant existence before certification. The epithets "hypochondriacal", "lazy and untidy", "of defective habits", "lacking in initiative", that appear repeatedly in the history of her institutional career, sufficiently describe her. Her physical health, both on admission and subsequently, was good. In later years she became rather stout.

I was called urgently to see her at 7 a.m. on February 21, 1938. The patient was anxious and covered in a cold sweat, and was complaining of vague abdominal pains and disinclination for food. The most noteworthy feature was the cold blue extremities. Both forearms and legs below the knee were quite cold. Radial, brachial and axillary pulses were absent, and the vessels themselves could not be palpated. The *dorsalis pedis*, popliteal and femoral arteries were affected in a similar fashion. The temperature of the legs and arms gradually approached that of the trunk only in the upper halves of their proximal segments. The only pulses to be felt were those of the common carotid arteries and, faintly, of the superficial temporal. The lips were a little dusky and the ear lobes a normal pink.

On examination of the thorax no apex beat was palpable, nor was there any superficial cardiac dullness. The heart sounds were distant but clear, the rhythm was regular, and the rate was 90 per minute. The blood pressure could not be estimated. Her chest was large and barrel-shaped, and movement was generally restricted. The percussion note was unimpaired over both lungs; the breath sounds were weak but of normal quality, and no adventitious sounds were audible.

The abdomen was fat, resonant and somewhat distended. Slight abdominal tenderness was universal. There was no rigidity.

Her condition rapidly became worse. Restlessness increased, cyanosis deepened in the face, breathing became stertorous and laboured, later gasping as she gradually lost consciousness. At about 10 a.m. she began to regurgitate reddish-brown material, at first in small mouthfuls, but soon in ever-increasing quantities until she expired at 11.30 a.m.

An autopsy was performed the same day. The brain was deeply congested; the cortical veins stood out prominently and the cranial sinuses were stuffed with blood. Apart from this no lesions were discovered in the brain and its vessels.

The heart was enlarged, the left ventricle moderately hypertrophied and the right side of the heart conspicuously dilated. The valves were normal. There was no coronary sclerosis and the single coronary orifice was not narrowed. The aorta in all its length was smooth and soft. The orifices of the large arteries arising from the arch, and the large abdominal trunks and the common iliac arteries were not narrowed, and intimal smoothness was not diminished. A length of radial artery was thin-walled and smooth, like the rest of the vascular tree.

The lungs were voluminous, rather deeply pigmented, and dry. The trachea and larger bronchi were filled with the same reddish vomitus noticed during life.

The stomach was distended; the small intestine was very dilated to within two or three feet of the ileocaecal valve, and was congested. The large intestine was still more deeply coloured, being dark purple down to the middle of the iliac colon, where it suddenly assumed a normal pale appearance.

The liver was normal; but there were dense adhesions binding the gall-bladder to the adjacent duodenum, and it was found on dissection that they freely communicated. A solitary cholesterol stone, the size of a pullet's egg, was found lying loosely in the middle region of the jejunum.

The kidneys and spleen were normal, the uterus and ovaries small and atrophic.

The immediate cause of death appears to have been spread of the intense arterial spasm to the vessels of the head and brain, with cerebral asphyxia. Vomitus was aspirated, but only as consciousness faded.

Can such intense and widespread constriction of large arterial vessels have followed reflexly from the recent presence of a large gall-stone in the upper part of the intestine?

Acknowledgement.

I am indebted to Dr. W. B. Ryan, medical superintendent of the Beechworth Mental Hospital, for permission to report this case.

Reviews.

MEDICAL BACTERIOLOGY.

IN the third edition of "Medical Bacteriology" the author, L. E. H. Whitby, covers the range of his subject both clearly and fully.¹ The author explains in his preface that the book is intended for use by medical students and busy practitioners. His aim is to present elementary and essential bacteriological facts together with the application of these to practical medicine.

The book is divided into two parts, Part I of 250 pages covering descriptive bacteriology, and Part II of 94 pages dealing with applied bacteriology. In the section on descriptive bacteriology are chapters on the theories of immunity, the filter-passing viruses, helminth infections, serological reactions and the cultivation of bacteria. Many of the commoner bacterial diseases, for example diphtheria and the spirochaetal infections, are dealt with in separate chapters. The second chapter of Part II describes the collection and examination of specimens. The third chapter deals with laboratory aids in the diagnosis and treatment of individual diseases.

The diseases are discussed in alphabetical order, the bacteriological procedures are described, and there are numerous references to other pages of the book. These are valuable chapters. The author, who is a clinical pathologist, makes comment on all the regular methods of investigation and emphasizes the likelihood of failures when unsatisfactory specimens are submitted or delay is made before examination.

The book is an excellent one for both students and practitioners.

¹ "Medical Bacteriology, Descriptive and Applied, including Helminthology," by L. E. H. Whitby, C.V.O., M.A., M.D., F.R.C.P., D.P.H.; Third Edition; 1938. London: J. and A. Churchill Limited. Large crown 8vo, pp. 381, with 79 illustrations. Price: 11s. 6d. net.

The Medical Journal of Australia

SATURDAY, JULY 30, 1938.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

THE MEDICAL PRACTITIONERS BILL.

THE Medical Practitioners Bill, 1938,¹ Is now before the Legislative Assembly of New South Wales. The stated objects of this bill are as follows:

To consolidate and amend the law relating to the registration of medical practitioners; to regulate the qualifications for and the effect of such registration; to repeal the Medical Practitioners Act, 1912, and the Medical Practitioners (Amendment) Act, 1915; and for purposes connected therewith.

These objects are commendable. Reform was needed. It is indeed time that serious efforts were made to protect a gullible public from the activities of medical charlatans and the specious promises of vendors of quack remedies. The major portions of the bill will meet with the general approval of the medical profession. We have fault to find with only one or two features. The Medical Board, which will consist of not less than seven nor more than nine members, all registered medical practitioners, will have only one member nominated by the New South Wales Branch of the British Medical Association. It is a pity that the profession will not have a greater say in the appointments. We would also draw our readers' attention to Section 46, which is directed against the use of a medical

practitioner's name or a name purporting to be that of a medical practitioner in any advertisement to promote "the sale of any food or drug whatsoever, or of any appliance for the prevention, alleviation, or cure of any human ailment or physical defect". Obviously this is intended to prohibit the use of such terms as "Dr. So-and-So's Corn Salve" *et cetera*; but it also strikes at legitimate advertising. If Section 46 becomes law as it stands, this journal will be unable to publish advertisements of preparations, instruments or appliances to which the names of medical men have become attached; it will not be possible for a proprietor of a drug, instrument or appliance to draw the attention of medical practitioners, either through this journal or by private circulation, to any report by a medical practitioner on the use of such drug, instrument or appliance. If an investigator proves the value of a thing in the alleviation of human suffering, there should be no restriction to the distribution of the news among medical practitioners, or indeed, in many instances, among the public. We hope that this section will be suitably amended.

Registration and qualifications for registration are dealt with exhaustively in Part III of the bill. A feature of great interest to students is the necessity for service as a medical officer in one or more approved hospitals or institutions for twelve months before registration. No one can find fault with this as a principle. It will be the Government's duty to ensure that every new graduate is given a hospital appointment without delay, and that suitable accommodation is provided for every resident medical officer. Furthermore, there will be need of some assurance that the specified period of twelve months will not be wasted, that the young graduates will be given the opportunity to gain experience in the more important branches of medical practice. No doubt these and many other relative matters will be governed by regulation. One advantage to the community will be that the Government will have less difficulty than heretofore in maintaining a full staff of resident medical officers at State institutions.

Graduates of foreign universities are ineligible for registration without attending the usual courses

¹ Extracts from the bill are published in this issue of THE MEDICAL JOURNAL OF AUSTRALIA, on page 175 and succeeding pages.

and passing the fourth, fifth and final degree examinations in the Faculty of Medicine in the University of Sydney. Further, no foreign graduate may be registered unless there are satisfactory provisions for the registration of Sydney graduates in the country of his graduation. Registration in some part of the British Empire does not of itself make a foreign graduate eligible for registration in New South Wales. There are several arguments in favour of these provisions, not the least being the necessity for the protection of medical students in the University of Sydney. There are about 900 at present. The numbers of graduates produced each year are more than enough to supply the demand; the growth of the profession is out of proportion to the growth of the population. It almost seems time that some attempt at limitation of the numbers of students was made. An influx of foreign graduates at this time would be disastrous to them. There is an answer to the argument that a leavening of foreign medical men would improve the quality of practice in New South Wales; for there is a special provision in the bill for the registration of foreign graduates engaged in post-graduate teaching and research work.

The board may refuse to register any person who has been convicted of a felony or misdemeanour in New South Wales or elsewhere, or any person whose name has been erased from a medical register in any country. Also, under certain conditions, the board may remove from the register a name that has been removed from a register in another country.

There is provision for the creation of a disciplinary tribunal, consisting of a chairman (who may be a judge of the District Court) and the members of the board. It will have the power to reprimand or caution a person, to suspend such person from practice for a period not exceeding twelve months, or to direct the removal of such person's name from the register. Any person adjudged guilty by the tribunal will have the right to appeal to the Supreme Court of New South Wales.

We would draw our readers' attention to Section 32, which provides for the payment of fees for the purposes of registration. Hitherto no fees have been charged for registration in New South Wales.

Provision is made for the appointment of a committee, to be known as the Medical Practitioners Charges Committee, which will have the duties of reviewing medical practitioners' accounts for fees on the complaint of persons to whom the accounts have been submitted. The desirability of some such referee has been recognized by the New South Wales Branch of the British Medical Association; indeed, some time ago a subcommittee with similar duties was created by the Branch council.

An unregistered person will not be allowed to make therapeutic use of radium unless he works under the immediate supervision of a registered person. The therapeutic use of X rays should be prohibited similarly. The Minister for Health might consider the desirability of providing some means of controlling the employment of some other forms of physical therapy.

The Governor is empowered to make regulations. Among other matters, regulations may be made in particular, "subject to such conditions as may be prescribed", to prohibit any registered person from collecting fees for work done by another registered person, and from agreeing to share fees with another registered person. These are important provisions. We believe that the practices hinted at are rare; but it would be idle to pretend that they do not exist. Legislation to prevent them is necessary in the interests of patients and of the profession as a whole.

The Minister for Health, who is the sponsor of the bill, deserves the congratulations of the community in general and the medical profession in particular. There are many interesting and important features that, for lack of space, are not discussed in this article, which indeed has already grown overlong. We would advise our readers to make themselves familiar with the act when, as seems likely, it has met the approval of Parliament.

It has been suggested by opponents of the bill that it is a product of the British Medical Association. This is not correct. We believe that, in his wisdom, the Minister sought the assistance, in the way of expressions of opinion, of individual members; but the council of the New South Wales Branch was not approached.

Current Comment.

URÆMIA AFTER HÆMORRHAGE.

To speak of uræmia after hæmorrhage is in a sense begging the question, for, though it is well known that the urea content of the blood may be greatly increased after the loss of large quantities of blood, it cannot be assumed that the patient is suffering from that somewhat vague clinical state known as uræmia. A. S. Bookless, writing on this subject, remarks that the increase in blood urea as a sequel to hæmorrhage is not so widely known as its occurrence after excessive doses of alkalis and in pyloric obstruction.¹ In Australia this fact should be familiar to those who have the opportunity of treating patients suffering from gastric and duodenal hæmorrhage in fully equipped hospitals, and the subject has been discussed by several contributors to this journal. Bookless has investigated thirteen cases of hæmorrhage from the upper portion of the alimentary tract. Three were characterized by a coincident obstruction; the remainder were cases of simple peptic ulcer. In this series the level of the blood urea varied from 52 to 150 milligrammes *per centum*. Sometimes it fell immediately, but in other cases it continued to rise during the ensuing day or two. Though recovery has been observed even in patients whose blood urea content has risen well over 100 milligrammes and even as high as 210 milligrammes *per centum*, this is exceptional; in Bookless's series the terminal percentage in the fatal cases varied from 190 to 402 milligrammes.

Primary hæmorrhagic shock, the importance of which has been emphasized by a number of writers, including Witts, in England, and Wood, in Australia, is not so formidable a condition as the state which may arise after one or two days, as these writers have also pointed out; it is during this latter period that the blood urea content rises still higher. Bookless describes the condition well, with emphasis on the falling pulse tension, the diminishing urinary output, the great restlessness of the patient, leading perhaps to delirium, and his subsequent apathy or coma. This disordered toxic state is roughly proportional to the level of the blood urea, but it is the actual cause of this syndrome which is the point at issue. Bookless believes that the symptoms so strongly resemble uræmia that, marked as it is by a poor urinary output and a high percentage of urea in the blood, the condition is one of clinical uræmia. We may here disregard the argument as to what "uræmia" actually is and concentrate rather on the point mentioned by several of the writers on the subject, that the level of urea in the blood is a more valuable indication of the patient's condition than either the blood pressure or the hæmoglobin content of the

blood. Bookless traverses the likely causes of this elevation of the urea in the blood, namely, renal insufficiency, absorption from decomposing blood in the bowel, and accelerated breakdown of tissue protein. It is obvious that mere concentration caused by fluid loss cannot explain this phenomenon, since the blood urea level may rise, and rise considerably, without fresh loss of blood. As regards the view that urea retention is due to disturbance of kidney function, there are several possibilities, including structural renal damage and lowered urinary excretion due either to a mechanical diminution of filtration or to a lowering of the renal capacity. Bookless does not believe that the lowering of the blood pressure alone can account for the depression of kidney function, for he points out that the height of the blood pressure is not proportional to the amount of urine excreted. Therefore he turns his attention to the extrarenal factors. In his discussion of these, the view that blood is absorbed from the bowel is not favoured by him, and he summarizes the experimental and clinical evidence against it. He is more inclined to support the hypothesis of increased breakdown of tissue protein induced by dehydration. In support of this view are adduced the following facts: loss of blood, starvation, withholding of fluid, recurrent vomiting and loss of fluid by sweat all add to the fluid loss; the early blood counts are often unexpectedly high; the surviving patients are observed to "fill out" rapidly as recovery takes place; similar changes occur in cases of vomiting due to pyloric stenosis; and lastly dehydration and wasting are commonly associated and are believed by many authorities to be causally related. In further support may be mentioned the undoubted value of the modern liberal dietary allowed to patients after hæmatemesis; and the belief, based on abundant clinical grounds, that an adequate supply of fluid helps to retard the abnormal katabolic activity of the dehydrated body. Incidentally it is curious to read after all this argument that all the patients in this series were starved for twenty-four hours; as it would seem desirable to replace fluid as soon as possible, this hard and fast routine appears unnecessary. Transfusions of blood were not employed in the cases studied by Bookless, but he quotes Wood's recommendations in this regard.

Strong evidence is presented in this article that adequate nutrition and replacement of fluid in the early stages of the treatment of hæmorrhage help to prevent the dangerous so-called secondary hæmorrhagic shock. Practically all modern workers on the subject are in agreement on this point. Even when facilities for blood urea estimations are not available practitioners should remember the lessons learnt from such observations. Not only must we strive to prevent the patient's dying from immediate blood loss, but we must also endeavour to mitigate the severe and sometimes fatal secondary results of such loss on his bodily functions.

¹ *Guy's Hospital Reports*, January, 1938.

Abstracts from Current Medical Literature.

GYNÆCOLOGY.

Menstruation-Like Hemorrhage in Rabbits.

B. ZONDEK (*The Journal of Obstetrics and Gynecology of the British Empire*, February, 1938) suggests that there may be a third hormone in the ovary which causes uterine bleeding. He has previously shown that an artificial amenorrhœa can be produced by the exhibition of large doses of follicular hormone. The follicular hormone produces degenerative changes in the corpus luteum and a reduction in the amount of progesterone. There are two possible explanations of this inhibiting action. Either the follicular hormone acts directly on the corpus luteum or it acts indirectly by inhibiting the production of prolan B from the anterior pituitary gland. The latter explanation appeals to the author. He is sceptical of the present belief that menstruation is the result of the passive cycle of the building up of the mucosa under the influence of œstrone and progesterone, and that the cessation of progesterone production causes the breakdown of the mucous membrane, together with bleeding. The problem is whether the duration of the life of the corpus luteum is determined by an alteration in the ratio of prolan A to prolan B or by the presence of a third substance which has not yet been isolated. To elucidate the matter further, experiments were carried out on rabbits, animals which normally have no menstrual flow. A dose of 500 rat units of prolan was injected intravenously into an infantile rabbit. Menstruation-like bleeding was obtained. If too small or too large a dose was given no bleeding occurred, and it was noted that in those parts of the endometrium which were under the influence of the corpus luteum no hemorrhage took place. At first sight it might be thought that this menstruation-like bleeding was due to œstrone produced by the follicles under the influence of prolan A. This possibility was eliminated by experiments conducted on rabbits, in which œstrone or its parent substance dihydroxyœstrone was injected intravenously. Hyperœmia could be produced, and occasionally small circumscribed hemorrhages, but the flat, extensive, menstruation-like hemorrhage which followed the prolan injections could not be produced by injection of œstrone or dihydroxyœstrone. The author admits that the bleeding produced in rabbits by injection of prolan is not strictly comparable with menstruation in women, for in the rabbit the hemorrhage comes from the proliferative mucous membrane, while in women menstrual hemorrhage comes from

the progestational mucosa. He believes that the luteinizing factor (prolan B) contained in the prolan injected into rabbits is responsible for the fact that the hemorrhage produced occurs only in the proliferative and not in the progestational mucosa, and he deduces from this that the luteinizing factor is superior to the corpus luteum hormone in checking bleeding. In his opinion the bleeding mechanism thus elicited in the rabbit may be compared with that existing in women. Since the injection of gonadotropic hormone does not produce any uterine hemorrhages in castrated animals, the author assumes that it mobilizes a "bleeding substance" in the ovaries of intact animals. The fact that the luteinizing factor of the anterior pituitary gland exerts an inhibiting influence upon the process of bleeding leads him to the conclusion that it is probably the follicle-ripening hormone which mobilizes the "bleeding substance" in the ovary.

Sex Hormone Factors in Recurrent Abortion and Sterility.

LYMAN W. MASON (*American Journal of Obstetrics and Gynecology*, April, 1938) makes a plea for the examination of premenstrual endometrium in cases of sterility and habitual abortion. In the absence of the secretory phase of the premenstrual endometrium it is obvious that the endocrine system is at fault and that in particular there is a lack of formation of the luteal hormone. Although the presence of the corpus luteum, in contrast with that of animals, is not necessary for the continuation of pregnancy to full term, there is evidence to show that it is necessary in the early months of pregnancy, and the author believes that there is a relationship between sterility due to the absence of a satisfactory nidus for the developing ovum and the occurrence of abortion caused by the failure of development of the corpus luteum. Several patients with histories of repeated abortions were successfully treated by pregnancy urine extracts, so that they carried their children to term. The results of treatment when abortion is actually threatened have not been satisfactory; the reason for this, in the author's opinion, is that a threatened abortion represents not the beginning, but the end of a damaging process, which has progressed beyond help.

Premenstrual Tension.

S. L. ISRAEL (*The Journal of the American Medical Association*, May, 1938) discusses the symptoms and treatment of "premenstrual tension", a term applied by Frank to a relatively uncommon train of symptoms which occurs cyclically during the premenstrual period in certain women of child-bearing age. The author is not concerned with the unpleasant symptoms, such as irritability and fatigue, which occur in 40% of women. In the well-marked case of premenstrual tension the

patient's condition may mimic an oncoming mental breakdown. There may be crying spells, irritability, insomnia, vertigo, painful turgidity of the breasts, and constant headaches. Nymphomania, when present, is a distressing symptom. Premenstrual ulcerative stomatitis was a major complaint in one case. Four of the patients were curetted to obtain endometrial biopsies; in all four the endometrium was in the proliferative stage and the corpus luteum was not excreting its progestational influence. Injection of corpus luteum extract gave excellent results, but on its cessation the condition returned. Permanent alleviation of symptoms was obtained by low-dose irradiation of the pituitary glands and ovaries.

Granulosa-Celled Tumour of Both Ovaries.

M. L. TRESTON and R. H. MALONE (*The Journal of Obstetrics and Gynecology of the British Empire*, February, 1938) report the case of a patient suffering from granulosa-celled tumours of both ovaries. The patient, an Anglo-Indian, aged thirty years, had had two children, one seven years old, and one one year and ten months old. Both had been normal full-time infants, born without any instrumental interference. There was no history of puerperal infection. The patient complained of amenorrhœa of eight months' duration, and had noticed a tumour of the abdomen during the last month. A month before the onset of amenorrhœa she had complained of three months' irregular bleeding, for which curettage had been performed. The surgeon who performed this operation noticed that both ovaries were enlarged, but considered that they were in a cystic condition. Abdominal section revealed bilateral solid tumours of both ovaries, that on the left mainly abdominal and that on the right pelvic. The tumours were bluish-grey in colour and irregular in outline. There were about 180 cubic centimetres of clear, straw-coloured fluid in the pelvis. The specimen submitted to the pathologist consisted of two tumours, roughly oval in shape, in size about 5.0 by 3.75 by 2.5 centimetres, the tumour removed from the left side being slightly the larger. They were well-capsuled and the cut section was greyish in colour, somewhat granular in appearance, with small scattered areas tinged with yellow. Microscopically the tumour consisted of clusters or groups of cells of various sizes, isolated from one another by rings of thin connective tissue. The general pattern of the tissue was loose because of a number of irregularly shaped empty spaces (cysts) lined by tumour cells. The morphology of the tumour cells was that of the well-known granulosa cell. The connective tissue, which was abundant, divided the areas of granulosa cells into irregular columns. This, together with uneven staining of the cells, simulating that of the endothelial cell, suggested that the

tumour was a type of the granulosa-cell carcinoma formerly designated as endothelioma of the ovary. The authors remark that, apart from the rarity of these tumours, two points are of interest: one the history of amenorrhoea, the other the age of the patient and her parity. Recovery from the operation was uneventful, and the patient had a course of X ray therapy, but died two and a half months after the operation.

OBSTETRICS.

Treatment of Intrauterine Asphyxia.

H. DÖRR (*Monatsschrift für Geburtshilfe und Gynäkologie*, February, 1938) reviews the methods adopted to combat fetal asphyxia during delivery. He presents the histories of nine cases in which treatment with "Cardiazol" was successful. He advises that it should be injected whenever the fetal heart rate shows signs of distress and should not be delayed too long, for permanent cerebral damage may occur. "Cardiazol" in doses of two cubic centimetres is slowly injected intravenously into the maternal circulation, and its action is observed within twenty-five seconds. The injection can be repeated if necessary without any ill effects. Injection into the mother's veins is preferable to direct injection into the fetal scalp or buttocks. He suggests that the mode of action is the prevention of venous congestion in the fetal brain. He found this treatment very useful during delivery in breech cases, and in no instance did aspiration pneumonia result. He believes that "Cardiazol" has a specific action in the prevention of intrauterine asphyxia provided it is used in time, but states that if employed too late it may cause further damage to the infant.

Premature Rupture of the Membranes.

A. WIESSMANN (*Monatsschrift für Geburtshilfe und Gynäkologie*, February, 1938) discusses the apparent increase in the number of cases in which premature rupture of the membranes complicates labour. Contrary to the experience of many writers, he has found that the ensuing labour is not shortened. In his series of one hundred cases the duration of labour was twenty hours, as compared with twelve and a half hours for normal patients. In seven instances delivery required abdominal section. The stillbirths numbered eleven, and showed the risks to the fetus of this complication of labour. After reviewing various methods of treatment, which were generally unsuccessful, he advises a preliminary dose of castor oil followed by an intramuscular injection of "Quinine-Calcium", which is repeated in three-quarters of an hour. Uterine contractions generally com-

mence within twenty minutes of the first injection and rapidly increase in strength. The use of pituitary extract, in his opinion, is generally not necessary, and in any case it should be employed only in small doses of two or three units, as the patient is still in the first stage of labour.

Paraldehyde in Labour.

E. D. COLVIN AND R. A. BARTHOLOMEW (*American Journal of Obstetrics and Gynecology*, April, 1938) analyse 500 cases in which paraldehyde was used as a basic agent for the relief of pain in labour. It is the authors' practice to withhold hypnotics in *primiparae* until the cervix is well thinned out and dilated to at least 4-0 or 5-0 centimetres. If it is desirable to relieve pain before this, they give 0-01 gramme of morphine with 0-0002 gramme of scopolamine or 0-09 gramme of "Nembutal" or 0-18 gramme of "Sodium Amytal". In their opinion it would be extremely unfortunate if, either through insistence on the part of the patient or over-indulgence on the part of the medical attendant, amnesia should become an early first-stage procedure. Their practice is to give an initial dose of 21 cubic centimetres of paraldehyde, which is well stirred into about 60 cubic centimetres of cold water, and to give subsequent doses of 4-0 to 8-0 cubic centimetres if vomiting occurs or signs of returning consciousness are present. The authors claim that amnesia can be obtained by this technique in 98% of cases. Owing to the occurrence of incoordination and excitability in certain patients, wrist-pads and restraining leather cuffs fastened to each side of the bed are desirable. A mild degree of apnoea in infants occurred in 12% of their cases; this they consider is of no significance in the full-term child, but may be of serious moment in the premature one.

Four Cases of General Peritonitis following Childbirth.

R. RUTHERFORD (*The Journal of Obstetrics and Gynecology of the British Empire*, February, 1938) reports four cases of general peritonitis following childbirth and discusses the diagnosis and treatment of peritonitis in the puerperium. The author emphasizes the fact that there is a vast difference in symptomatology between peritonitis associated with the usual surgical conditions (appendicitis *et cetera*) and peritonitis arising in the puerperium. Whilst tenderness and rigidity are features in the former, they are almost entirely absent in the latter. In the four patients described, all of whom recovered, the streptococcus was not the infecting organism; in most cases a staphylococcus was present. Signs of diagnostic value were irritability of the bowel, as shown by the presence of diarrhoea, and a certain amount of distension, which was present in all four cases but was not very

severe in two of the patients described. Dulness in the loins was demonstrated in three patients. *Paracentesis abdominis* yielded a large quantity of turbid fluid in one of the cases, whilst in the others no fluid was withdrawn in spite of the fact that free fluid was found at operation later. The author opened the abdomen under local infiltration anaesthesia and drainage was provided, in one case with almost immediate dramatic results.

Low Reserve Kidney.

H. J. STANDER AND K. KUDER (*American Journal of Obstetrics and Gynecology*, January, 1938) express their views as to what is meant by "low reserve kidney" in contrast with chronic nephritis and essential hypertension. Accepting the function of the glomerulus as one of filtration and that of the tubule as one of reabsorption, the authors state that it is obvious that such functions are dependent on several factors: the rate and pressure of the flow of blood through the kidney and the number and size of capillary channels, together with the actual permeability of the glomerular membrane. They believe that the mild albuminuria that occurs mostly in *primiparae* and is not associated with any permanent rise in blood pressure or with the presence of albuminuria after delivery, comes under the category of "low reserve kidney". They admit the possibility that these symptoms may be a mild form of preclampsia, but they believe that the evidence is against this. "Low reserve kidney" is a diminution of the functional activity of the kidney, due either to vascular changes or to a limited number of active glomeruli and tubules. An essential point is that with a "low reserve kidney" the prospect of normal function in the interval between and at succeeding pregnancies is good, whereas in mild chronic nephritis the kidney is further damaged by pregnancy and never returns to normal. One can be treated conservatively; the other demands radical measures.

Transperitoneal Exclusion Caesarean Section.

INGLIS F. FROST (*The American Journal of Surgery*, June, 1938) describes a new method of Caesarean section in which the advantages of low Caesarean section are combined with those of an extraperitoneal operation. A Pfannenstiel incision is used. The utero-vesical fold of the peritoneum is injected with saline solution in order to lift it up. Then the upper edge of the visceral peritoneum is sutured to the parietal peritoneum and the suturing is continued round the wound. The ordinary transverse incision in the uterus is made. After delivery of the infant and the closure of the incision in the uterus the upper and lower ends of the peritoneum are approximated.

British Medical Association News.

NOMINATIONS AND ELECTIONS.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Gard, John Joseph, M.B., 1933 (Univ. Sydney), Commonwealth Health Department, Customs House, Sydney.

The undermentioned have been elected members of the South Australian Branch of the British Medical Association:

Burnard, Richard de Garis, M.B., B.S., 1937 (Univ. Adelaide), 23, Cheltenham Street, Rosefield.
Chapple, Colin Frederick, M.B., B.S., 1936 (Univ. Adelaide), 128, Glen Osmond Road, Parkside.
Watson, George Michael, M.B., B.S., 1936 (Univ. Adelaide), Adelaide Hospital, Adelaide.
Sutherland, Hamilton D'Arcy, M.B., B.S., 1937 (Univ. Adelaide), Adelaide Hospital, Adelaide.

Medical Societies.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING of the Melbourne Pædiatric Society was held at the Children's Hospital, Carlton, on April 13, 1938, Dr. COLIN MACDONALD, the President, in the chair.

Dr. Macdonald explained to the members that the meeting had been arranged as the result of a letter received from the Secretary of the Federal Council of the British Medical Association, asking for guidance from the members of the Melbourne Pædiatric Society on the subject of a resolution passed at the fifth session of the Australasian Medical Congress (British Medical Association) held at Adelaide in 1937. He then quoted the resolution, which was as follows:

That the pædiatric section of congress recommend that every effort should be made by the executive of the British Medical Association to further the application of the scientific facts of normal child development, mental and physical, for the benefit of pre-school children in all the States of the Commonwealth.

Dr. Macdonald then said that in order to ascertain and define some of the known facts, it had been decided to devote a meeting of the society to discuss the subject of the help the medical profession could give to pre-school children. Miss Christine Heinig, the principal of the Kindergarten Training College in Melbourne, had been invited to contribute a paper, in which she would present an outline of the rationale and objectives of the nursery school and kindergarten methods of training.

The Mental Hygiene of the Pre-School Child.

Dr. JOHN WILLIAMS read a paper entitled "The Mental Hygiene of the Pre-School Child" (see page 145).

The Training of the Pre-School Child.

Miss CHRISTINE HEINIG read a paper entitled "The Training of the Pre-School Child" (see page 155).

Miss Heinig distributed to members copies of a child development chart containing items found in research studies and stated by authorities.

Dietetics and Nutritional Standards.

Dr. VERA SCANTLEBURY read a paper entitled "Dietetics and Nutritional Standards" (see page 148).

Dr. Scantlebury distributed to members a number of leaflets extracted from the report by the Technical Commission of the League of Nations on the assessment of the nutritional state; an extract from the work of the group of experts appointed to study methods of assessment of the state of nutrition in infants and adolescents; a special

leaflet linking up theoretical and practical diet; a copy of the League of Nations report on the physiological basis of nutrition; and a leaflet containing some somatometric measurements of pre-school children.

Dr. H. BOYD GRAHAM thanked the opening speakers for what he felt sure the members of the society would accept as authoritative presentations of the several angles of the subject under discussion. He said that nutritional status was difficult to assess or to define. It was usually assessed by weight-height-age comparisons, and had been defined in a special report of the American Child Health Association as "that manifestation of physical condition which is promptly responsive to food, sleep and exercise". They had decided that "it was not safe to use over-weight or under-weight as a certain guide to nutritional status, but the periodic variations in an individual case formed a valuable guide". Height-weight-age tables should be used only by people capable of using them as they would any table of averages, which must be interpreted in the light of other factors. The interpretation of the measurements and advice as to the corrective action to be taken were matters for a physician's judgement.

Dr. Boyd Graham stressed the desirability of keeping records of the development of children from infancy, and the need for records to be built up by each successive group of trained observers into whose care the children passed. The records should deal not only with growth and nutrition, but also with mental development and training, social development and probably with moral development. He illustrated by means of lantern slides the types of records he had prepared in the cases of approximately two hundred and fifty children. The development chart that he used was based on that advocated by the American Child Health Association. He recommended this chart with confidence for extensive use for pre-school children. He had been interested to apply to the back page of it, on which were presented the graphs of weight and height, the figures obtained in Melbourne by Dr. Kincaid, as published in THE MEDICAL JOURNAL OF AUSTRALIA of March 26, 1938, at page 579. When it was remembered that the measurements made by Dr. Kincaid were concerned with children who, for the most part, could be called under-privileged, it became apparent that, other things being equal, a child whose weight and height for age fell below the Woodbury averages should be suspected of malnutrition, and that this suspicion was accentuated if a child was under the average weight, though up to or above the average height for age. A simple minimal scheme of child study was required for general application as a means of bringing to light the existence of anomalies in physical, mental or social development. If the distortions were corrected at an early age the children would be much less likely to develop serious behaviour problems in childhood, and would make better and happier citizens. He was of the opinion that the campaign should include medical supervision of all organized infant and child-welfare operations.

Dr. HILDA KINCAID said that the ability with which the speakers had condensed and brought out the highlights of such very large and important subjects led her to surmise that they had, in childhood, had the benefit of the practical application of child psychology. Dr. Kincaid was pleased to hear emphasis placed on the importance of the psychological aspect not being dissociated from the physical aspect of the child's development, because she thought that there was a tendency to allow interest in the psychological and emotional side to overshadow somewhat interest in the physical side, in an effort to make "maladjustments" account for too much. When attention was closely focused on one branch of the subject, the other branches might temporarily lose the right perspective. Dr. Kincaid mentioned as instances in the field of dietetics the undue prominence in succession of calories, vitamins and minerals.

Dr. Kincaid told those present that for some years pre-school sessions had been held in the city of Melbourne health centres. The children were completely undressed, weighed, measured and given a careful medical clinical examination, and the results were recorded on cards. In

those centres there had been the opportunity of examining some thousands of pre-school children and of getting some interesting data with regard to the incidence of various defects and correlating them with each other. The findings had been recorded in the annual medical reports to the city council. She and her fellow-workers had also been able to do some work on nutritional assessment, and one useful point had emerged: there was an extraordinarily close relation between the assessment of nutrition made by clinical observation and by reference to height-weight standards.

While not intending to expand on the numerous interesting points which arose in pre-school centre work, Dr. Kincaid made a statement which she referred to as an appalling one; she herself accepted it as a challenge, and she took the opportunity of laying it down as a challenge to members of the medical profession and to all others interested in human fitness. The statement was that of every hundred children examined in the pre-school centres to which she had referred, only three children between the ages of five and six years were without some sort of defect. Even according to the existent, almost certainly debased, ideas of what constituted perfection, only 3% could be regarded as perfect children. The remaining 97% were either malnourished in appearance or under the accepted weight for height; they had carious teeth or unhealthy tonsils or obstructed adenoids; they were anæmic; they had a poorly-balanced musculature, resulting in bad posture; they had bony deformities, such as bow-legs, Harrison's sulcus, or frontal bossing; or they had some other defect, minor or major, which debarred them from being classified as perfect children. She regretted that she was unable to express the faintest idea of the proportion that were classifiable as emotionally or mentally perfect. The percentage of physical non-defectives found in the different age-groups between two and six years diminished rapidly with each year. Between the ages of two and three years 35% were non-defective, between the ages of three and four years 20%, between the ages of four and five years 9%, and between the ages of five and six years 6%.

The State, the municipalities and the medical profession at large had combined with very good effect to improve the health of babies, and it remained for the medical profession to endeavour to improve the health of pre-school children to a degree which was at least equal to and not worse than that of the infants. Admittedly it was a much more difficult problem, because the older a child grew, the more varied was the environment and the greater were his needs. However, the essentials of health were known and were extremely simple. Dr. Kincaid summarized the essentials as sufficient of the right kind of food, fresh air, sunlight and exercise, sleep and happy occupation within the limits of the individual. The fact that there was difficulty in obtaining those simple essentials for all children in the community offered a challenge which the medical profession could not ignore.

DR. GUY SPRINGTHORPE said that after the admirable symposium presented by the opening speakers he would not add any further facts. How best to help the pre-school child was one of the outstanding medical problems of the day. In order to cope with the situation it was necessary for the various agencies concerned—educational, medical and social—to be aware of the vast amount of new and valuable knowledge that had accumulated in the past few decades, particularly dealing with mental hygiene. In improving the health of pre-school children an important part must be played by the medical profession. If they were not able and willing to cooperate effectively, the work would be done—less well, he considered—by others. The most practical step the Pædiatric Society could take was to help medical practitioners, both those especially interested in children and those in general practice, to inform themselves, first, of the great need for improvement, and secondly, how best to assist in bringing it about.

For this purpose he proposed the following motion:

That the committee of the Melbourne Pædiatric Society should arrange, in conjunction with the Council of the Victorian Branch of the British

Medical Association, that a series of post-graduate lectures should be held dealing with the subject of the pre-school child.

DR. F. KINGSLEY NORRIS seconded the motion proposed by Dr. Springthorpe. He said that it was highly advisable that the members of the medical profession should do something to tackle the problem. At the recent session of congress in Adelaide it had been decided that an Australian section of Pædiatrics should be formed within the British Medical Association; formation of the special section was still in the gestation period; it was on the way; he hoped to be present at the delivery. As an unofficial body medical men could do very little. It was necessary to organize and to be approved in treating with governmental authorities. The proposed new section would be a body with authority and weight that could not be "shown the door".

The President, after expressing his keen appreciation of the quality and value of the discussion and of the importance of the subject, put the motion to the meeting and it was carried without dissent.

Medical Practice.

THE MEDICAL PRACTITIONERS BILL, 1938.

THE Medical Practitioners Bill, 1938, is now being debated in the Legislative Assembly of New South Wales. The following extracts are published for the information of medical practitioners.

Explanatory Note.

This Bill consolidates and amends the law relating to medical practitioners.

The main purposes of the Bill are—

- (a) the reconstitution of the Medical Board and the definition of its powers, authorities, duties and functions;
- (b) the registration, as of course, under the Bill, of medical practitioners who were registered under the repealed Acts immediately before the commencement of the Bill;
- (c) The definition of the qualifications for registration as a medical practitioner after the commencement of the Bill; the powers of the Medical Board in relation to such registrations; and the right of any person refused registration to appeal to the Supreme Court;
- (d) the constitution of a disciplinary tribunal consisting of a District Court Judge as Chairman and the members of the Medical Board; the powers of such tribunal; the manner of reference of complaints to it; and the right of appeal to the Supreme Court against its decisions;
- (e) the constitution of a Medical Practitioners Charges Committee, and the definition of its powers and functions in the case of disputes as to charges between a medical practitioner and his patient.

The Bill contains also various provisions ancillary to its main purposes, the most important of which are—

- (i) requirement that a person registered after the commencement of the Bill shall have at least twelve months' hospital experience before commencing to practise his profession;
- (ii) regulation of advertising in certain respects;
- (iii) regulation of the use of degrees, titles, diplomas, etc., by medical practitioners;
- (iv) control of advertising of certain types of medicines, etc.

The Bill also contains various provisions of a machinery character.

PART I.

Preliminary.

4. The Medical Practitioners Act, 1912, and the Medical Practitioners (Amendment) Act, 1915, are hereby repealed.

PART II.

The Medical Board.

5. (1) There shall be a board to be called the New South Wales Medical Board the members of which shall be appointed by the Governor.

(2) The board shall consist of not less than seven nor more than nine members.

(3) Of the members one shall be appointed on the nomination of the Senate of the University of Sydney, and one other shall be appointed on the nomination of the New South Wales Branch of the British Medical Association.

The nominations shall be made in the manner prescribed.

(4) No person shall be eligible for appointment as a member unless at the time of appointment such person has been registered as a medical practitioner in New South Wales for not less than ten years, under this Act or the Acts repealed by this Act.

(5) No person shall be qualified to act as a member unless he is registered under this Act.

(6) The members of the board shall, subject to this Act, hold office for a period of seven years, but shall be eligible for re-appointment.

(7) The provisions of the Public Service Act, 1902, or of any Act amending that Act, shall not apply to or in respect of the appointment of any member of the board, and a member of the board shall not be subject to the provisions of any such Act during his term of office.

(8) The persons who, immediately before the commencement of this Act, hold office as members of the New South Wales Medical Board constituted under the Acts repealed by this Act, shall be deemed to have been appointed under this Act as members.

PART III.

Registration and Qualifications Thereof.

16. All persons whose names were, immediately before the commencement of this Act, registered in the register of medical practitioners kept in pursuance of the Acts repealed by this Act, shall, without application or inquiry, be registered under this Act, and shall be deemed to have been so registered as from such commencement, but shall be subject in all respects to the provisions of this Act except where otherwise provided.

17. (1) In addition to the persons mentioned in section sixteen of this Act every person shall be entitled to be registered who proves to the satisfaction of the board that he—

(a) is the holder of a degree (granted after due examination) in medicine or surgery of any University in the Commonwealth of Australia or the Dominion of New Zealand which is legally authorised to grant such degree; or

(b) has passed through a regular graded course of medical study of five or more years' duration in a school of medicine in some part of the British Empire, such course being recognised by the board as not lower in standard than that required by the by-laws of the University of Sydney for the degree of bachelor of medicine, and—

(i) has received, after due examination, from a university, college, or other body with which such school of medicine is associated, and which is duly recognised for the purpose in such part, a degree or diploma, certifying to his ability to practise medicine or surgery; and

(ii) is by law entitled to be registered or to practise as a medical practitioner in such part; or

(c) has passed through a regular graded course of medical study of five or more years' duration in a school of medicine in some country not being part of the British Empire, and—

(i) has received after due examination from a university, college, or other body, with which such school of medicine is associated, and which is duly recognised for the purpose in such country, a degree or diploma certifying to his ability to practise medicine or surgery; and

(ii) is by law entitled to be registered or to practise as a medical practitioner in such country; and

(iii) in addition thereto has passed the Fourth, Fifth and Final Degree Examinations prescribed by the Senate of the University of Sydney for students in the Faculty of Medicine, after attending the courses of instruction prescribed by and otherwise complying with the by-laws of the University:

Provided that a person shall not be entitled to be registered upon proof of the matters referred to in paragraph (b) of this subsection unless either the board is satisfied that, by the laws or regulations in force in that part of the British Empire, the right to be registered and to practise as a medical practitioner in that part is granted to graduates in medicine of the University of Sydney by virtue of their being such graduates and without further examination or such person has passed the Fourth, Fifth and Final Degree Examinations prescribed by the Senate of the University of Sydney for students in the Faculty of Medicine, after attending the courses of instruction prescribed by and otherwise complying with the by-laws of the University:

Provided further that a person shall not be entitled to be registered upon proof of the matters referred to in paragraph (c) of this subsection unless the board is satisfied that, by the laws or regulations in force in that country, the right to be registered and to practise as a medical practitioner in that country is granted to graduates in medicine of the University of Sydney by virtue of their being such graduates and either without further examination or subject to passing further examinations (either with or without an obligation to attend a course of instruction) which, in the opinion of the board, are not more onerous than those referred to in subparagraph (iii) of paragraph (c) of this subsection.

(2) Where any person is registered under this Act pursuant to this section the following provisions shall have effect:

(a) The registered person shall be—

(i) competent to accept or to hold any appointment as a medical officer in any public hospital or separate institution within the meaning of the Public Hospitals Act, 1929-1937, or as a medical officer in any private hospital or other institution approved by the Board;

(ii) qualified to sign any medical certificate of the cause of death of any deceased person where such certificate is given in the course of his duties as such a medical officer.

(b) Except as provided in paragraph (a) of this subsection no such person shall practise his profession unless and until—

(i) he has, for a period of twelve months, or for periods amounting in the aggregate to twelve months, served as a medical officer in one or more of the hospitals or institutions referred to in subparagraph (i) of paragraph (a) of this subsection; or

(ii) he satisfies the Board that he has, for a period of twelve months, or for periods amounting in the aggregate to twelve months, served as a medical officer in one or more hospitals or institutions (whether in New South Wales or elsewhere) approved by the Board.

(c) Any person who practises his profession in contravention of the provisions of this subsection shall be deemed not to be registered.

(3) No person whose name shall have been removed from the register under this Act or from the register of medical practitioners kept in pursuance of the Acts repealed by this Act, shall be entitled to be registered under this Act solely by reason of his being possessed of one of the qualifications mentioned in subsection one of this section.

(4) The board may refuse to register the name of any person who is otherwise entitled to be registered but—

- (a) who has in New South Wales been convicted of a felony or misdemeanour or elsewhere of any offence which if committed in New South Wales would have been a felony or misdemeanour; or
- (b) whose name has been, for any reason affecting the conduct of such person in any professional respect, erased or removed from any register or roll established or kept under any law in any other part of the British Empire or in any foreign country providing for the registration or certification of medical practitioners under a public authority; or
- (c) who is of unsound mind or has been guilty of habitual drunkenness or of addiction to any deleterious drug.

The board shall not refuse to register the name of any person on the ground specified in paragraph (a) of this subsection when the offence was not from its trivial nature or from the circumstances under which it was committed such as to render such person unfit in the public interest to practise his profession or on the ground specified in paragraph (b) of this subsection unless the reason for such erasing or removal was an act or omission of a nature affecting his conduct in any professional respect for which, if done or omitted to be done in New South Wales, the disciplinary tribunal would have been authorised under this Part of this Act to direct that the name of such person be removed from the Register of Medical Practitioners for New South Wales if registered therein.

(5) No person shall be registered under this Act unless the board is satisfied that such person is of good character.

21. (1) The board may, at the request of any institution or organisation interested in post-graduate teaching in medicine, grant to any person not ordinarily resident in New South Wales a certificate of registration for post-graduate teaching or for research work in medicine.

24. (1) The board may send to any registered person, by registered letter addressed to him at his address as appearing in the register, an inquiry as to whether or not he has changed his address or residence.

(2) If no reply is received to that letter within six months from the posting thereof, or if the letter is not delivered or is returned to the board, the board may remove from the register the name of such person.

(3) Any name removed from the register pursuant to this section may be restored by the board.

25. (1) If any person has been registered under this Act by reason of any false or fraudulent representation or declaration, made either verbally or in writing, or if any person not entitled to be registered under this Act has been so registered, the board shall remove the name of that person from the register.

(2) If any particulars appearing on the register in respect of the qualifications of any registered person are proved to the satisfaction of the board to be or are to the knowledge of the board false or erroneous in any respect, the board shall remove those particulars from or otherwise amend the register.

(3) The provisions of subsection two of this section shall apply notwithstanding the fact that, at the time when the entry in the register was made, the registered person was actually possessed of the qualifications particulars whereof appear in the register, or that at that time the entry was otherwise correct.

(4) Any person whose name has been removed from the register in pursuance of subsection one of this section, or

any person the particulars of whose qualifications have been altered in pursuance of subsection two of this section, may apply to the Supreme Court, in accordance with the rules of court, for an order to the board for the restoration of his name to the register, or for the restoration to the register of any particulars as to his qualifications, and thereupon the court may make such order in the matter as it thinks fit, or may refuse to make any order.

26. (1) If the board is satisfied that any person registered under this Act on the grounds mentioned in paragraph (b) or in paragraph (c) of subsection one of section seventeen of this Act, has since been removed for misconduct from any register of medical practitioners in the United Kingdom or in the part of the British Empire or other country in which the degree or diploma referred to was granted, the board may remove his name from the register:

Provided that the board shall not remove the name of such person from the register pursuant to this subsection if the reason for the previous erasing or removal from a register was an act or omission affecting his conduct in a professional respect unless such act or omission was of a nature for which, if done or omitted to be done in New South Wales, the disciplinary tribunal would have been authorised under this Part of this Act to direct that the name of such person be removed from the Register of Medical Practitioners for New South Wales if registered therein.

27. (1) A complaint or charge that any registered person—

- (a) has been convicted in New South Wales of a felony or misdemeanour, or elsewhere of an offence which, if committed in New South Wales would have been a felony or misdemeanour; or
- (b) has been guilty of habitual drunkenness or of addiction to any deleterious drug; or
- (c) has been guilty of infamous conduct in any professional respect,

may be preferred to the Director-General of Public Health, who shall cause the same to be investigated.

Where, in the opinion of the Director-General, the circumstances warrant such a course, he may refer the complaint or charge to the disciplinary tribunal constituted under section twenty-eight of this Act, and, in such case, shall, where practicable, cause to be served on such registered person a notice specifying, with sufficient particularity to enable such registered person to answer the same, the grounds of the complaint or charge, and informing such registered person that the same has been referred to the disciplinary tribunal.

(2) Without limiting the meaning of the expression "infamous conduct in any professional respect" a registered person shall be deemed to be guilty of such conduct who—

- (a) (i) employs in connection with his professional practice an assistant who is not duly qualified or registered, and who permits such assistant to attend, treat or perform operations upon patients in respect of matters requiring professional discretion or skill; or
- (ii) by his presence, countenance, advice, assistance or co-operation, knowingly enables an unqualified or unregistered person, whether described as an assistant or otherwise, to attend, treat, or perform any operation upon a patient in respect of any matter requiring professional discretion or skill, to issue or procure the issue of any certificate, notification, report or other document of a like character or to engage in professional practice as if the said person were duly qualified and registered,

but shall not be deemed to be guilty of such offence by reason only of acts performed in relation to the proper training and instruction of bona fide students or of the legitimate employment of dressers, nurses, dispensers, surgery attendants, technicians, and skilled mechanics under the immediate personal supervision of such registered person; or

- (b) uses any certificate, diploma, membership, degree, license, letters, testimonial, or other title, status, document or description in relation to himself as a medical practitioner or in the practice of his profession as such, other than those (if any) which the board has authorised, in pursuance of paragraph (b) of subsection three of section fifteen of this Act, to be entered in respect of such registered person in the register, but shall not be deemed to be guilty of such offence by reason only of the use by him of any certificate, diploma, membership, degree, license, letters, testimonial or other title, status, document or description which was lawfully used by him immediately before the commencement of this Act or of the use by him of the description "doctor", "physician", "surgeon" or "medical practitioner".

28. (1) The disciplinary tribunal shall consist of a chairman, appointed as in this section provided, and the members of the board.

29. (1) Where any registered person has been adjudged guilty by the disciplinary tribunal, that tribunal may by order—

- (a) reprimand or caution such person; or
- (b) suspend such person from practice for a period not exceeding twelve months; or
- (c) direct that the name of such person be removed from the register.

(4) There shall be a right of appeal to the Supreme Court from an order of suspension or an order directing that the name of any person be removed from the register pursuant to this section, and on any such appeal the court may make such order as it thinks proper, having regard to the merits of the case and the public welfare.

Any such appeal shall be in the nature of a rehearing, and shall be made in accordance with rules of court.

32. The following fees shall be paid to the board in respect of the several matters hereinafter referred to:

	£	s.	d.
(a) for registering any person	3	3	0
(b) for entering in the register any of the particulars referred to in paragraph (a) or paragraph (b) of subsection three of section fifteen of this Act	0	10	6
(c) for restoring the name of any person, other than a person to whom a license under section thirty of this Act has been granted, or a person whose name has been ordered by the Supreme Court to be restored to the register	1	1	0

PART IV.

Medical Practitioners' Fees.

34. (1) There shall be a committee to be called the Medical Practitioners Charges Committee.

(2) The committee shall consist of three members of whom two shall be the persons who for the time being are the holders of the following offices:

- (a) Director-General of Public Health;
- (b) Under Secretary, Department of Public Health;

and of whom one shall be a member of the board appointed for the purpose by the board.

35. (1) Every registered person shall be entitled to sue in any court of competent jurisdiction for the recovery of the charge or remuneration for any medical or surgical advice, service, attendance, or operation rendered or performed by him.

(2) No action or suit for the recovery of fees or remuneration for professional services of any kind as a medical practitioner shall be commenced until the expiration of one month after a bill setting out the amount claimed has been served personally or by post on the party to be charged with the same.

(3) Notwithstanding anything contained in subsection two of this section proceedings may be taken under the Arrest on Mesne Process Act, 1902, at any time, notwithstanding that the bill may not have been served or that the period of one month had not elapsed.

36. (1) The party chargeable may within one month after service upon him of a bill apply in the prescribed manner to the committee to review the same.

(2) Where an application is made pursuant to subsection one of this section to review a bill the committee shall proceed to review the bill and certify what, upon such review, is found to be a reasonable charge or remuneration in respect of the medical or surgical advice, service, attendance, or operation to which the bill relates.

(3) The committee may require such evidence to be furnished as it may think necessary or desirable for the purpose of such review and may fix a time within which such evidence shall be furnished.

If any person neglects or fails to furnish any evidence so required within the time so fixed the committee may proceed to review the bill without such evidence.

(4) In the review of any bill the committee shall have regard to the following matters—

- (a) the time occupied in and the nature of the medical or surgical advice, service, attendance, or operation rendered;
- (b) the distance between the consulting room or residence of the medical practitioner and the place at which he rendered the advice, service, attendance, or operation;
- (c) the hours of the day or night at which such advice, service, attendance, or operation was rendered;
- (d) the degree of skill, knowledge or experience required or given in the rendering of such advice, service, attendance, or operation;
- (e) whether the medical practitioner rendered such advice, service, attendance, or operation in the capacity of specialist, consultant, or general practitioner;
- (f) any other matter which to the committee appears relevant.

37. Section thirty-six and subsection two of section thirty-five of this Act shall not apply in any case where the amount of the charge or other remuneration has been agreed upon before the advice, service, attendance, or operation was rendered or performed, nor in any case where the bill is in respect of the costs of medical treatment within the meaning of the Workers' Compensation Act, 1926-1929.

PART V.

Miscellaneous.

42. (1) Any person, not registered under this Act, who takes or uses any name, initials, word, title, addition, description or symbol which either alone or in conjunction with other words or having regard to the circumstances in which it is taken or used indicates or is capable of being understood to indicate or is calculated to lead persons to infer that he possesses a degree, diploma, or other qualification of a nature which would entitle him to be registered as a medical practitioner, or that he is registered as a medical practitioner under this Act, shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding fifty pounds.

(2) No person shall, otherwise than in accordance with the regulations, advertise himself to be entitled, qualified, able or willing to practise medicine or surgery in any of its branches or to give or perform any medical or surgical advice, service, attendance or operation.

Any person who contravenes any of the provisions of this subsection shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding fifty pounds.

(3) Subsection two of this section shall not apply to an advertisement by any member of a life-saving, ambulance or first-aid association, being a charitable institution, or by a member of a mine rescue corps, in relation to the lawful exercise of his functions or duties as a member of such association or corps, but shall apply to every advertisement by any other person whether or not registered under this Act.

43. (1) Every person who—

- (a) causes, permits or suffers to be done for him or on his behalf or in relation to himself, any act, matter or thing which, if done by him personally, would render him liable to conviction for an offence against section forty-two of this Act; or
- (b) does or causes or permits to be done for or on behalf of, or in relation to any other person, any act matter or thing which, if done by such other person personally, would render him liable to conviction for an offence of the nature referred to in paragraph (a) of this subsection,

shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *twenty* pounds.

(2) Every person who exhibits or publishes, or causes, permits or suffers to be exhibited or published any letter or any circular, handbill, placard, card, letter paper, bill-head, receipt form, or invoice, or any document or paper to be used in connection with any business, practice, or profession, or other advertisement of any kind whatsoever, whereby any person advertises or holds himself out contrary to any provision of section forty-two of this Act, or attempts so to do, shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *twenty* pounds:

Provided that this subsection shall not apply to any newspaper or magazine proprietor, publisher or printer publishing such advertisement before written notice to him from the secretary to the board that such advertisement is contrary to the said section.

45. Any person not registered under this Act who uses radium for the treatment of any human ailment or physical defect, otherwise than under the immediate personal supervision of a registered person, shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *fifty* pounds.

46. (1) Any person who publishes by any means whatsoever, or causes to be so published, any advertisement to promote the sale of any food or drug whatsoever, or of any appliance for the prevention, alleviation, or cure of any human ailment or physical defect, and who, in such advertisement, uses concerning or in relation to the food, drug or appliance any name or title purporting to be that of a medical practitioner, doctor of medicine, physician or surgeon, shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *twenty* pounds.

(2) If any such advertisement is published in a newspaper printed and published in New South Wales, the proprietor, publisher, and printer of that newspaper shall severally (and without excluding the liability of any other person) be guilty of the offence and liable to the penalty referred to in subsection one of this section.

(3) Where any person is charged with an offence against this section in respect of the publication, within one year after the commencement of this Act, of an advertisement to promote the sale of a food, drug or appliance, it shall be a sufficient defence if such person proves that the advertisement to which the charge relates is in the same terms or is substantially to the same effect as advertisements, published at or before such commencement, to promote the sale of that food, drug or appliance.

47. (1) Any person who publishes, by any means whatsoever, or causes to be so published, any advertisement which—

- (a) is intended or apparently intended by such person or any other person to promote the sale of any article as a medicine, preparation or appliance for the prevention, cure or relief of any human ailment or physical defect; and
- (b) contains any statement which is false in any material particular relating to the ingredients, composition, structure, nature or operation of the medicine, preparation or appliance or to the effects which have followed or may follow the use thereof,

shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *fifty* pounds.

(3) Every person who sells any newspaper or publication published outside of New South Wales containing any advertisement which—

- (a) is intended or apparently intended to promote the sale of any article as a medicine, preparation or appliance for the prevention, cure or relief of any human ailment or physical defect; and
- (b) contains any statement which is false in any material particular relating to the ingredients, composition, structure, nature or operation of the medicine, preparation or appliance or to the effects which have followed or may follow the use thereof,

shall be guilty of an offence and shall be liable on conviction to a penalty not exceeding *fifty* pounds.

Provided that no prosecution shall be instituted against any such person unless he has been warned by the Director-General of Public Health of the falsity of the statement or of some other statement substantially to the same effect and that the selling of any such newspaper or publication is an offence.

PART VII.

Regulations.

53. (1) The Governor may make regulations not inconsistent with this Act prescribing all matters which by this Act are required or permitted to be prescribed or which are necessary or convenient to be prescribed for carrying out or giving effect to this Act, and in particular and without prejudice to the generality of the foregoing power may make regulations—

- (a) prescribing the procedure to be followed at all meetings of the board, and at all inquiries made by the board;
- (b) prescribing the manner in which a complaint or charge against a registered person may be preferred to the Director-General of Public Health;
- (c) prescribing the procedure to be followed at and any matters incidental to the holding of an inquiry in respect of any complaint or charge referred by the Director-General of Public Health to the disciplinary tribunal;
- (d) regulating the manner of keeping and the form of the register;
- (e) prescribing forms to be used and fees to be paid, either in addition to or in substitution for any forms and fees prescribed by this Act;
- (f) prescribing the manner in which any notice or notification under this Act may be served;
- (g) prohibiting any registered person demanding payment of or collecting the charge or remuneration for any medical or surgical advice, service, attendance or operation rendered or performed by any other registered person except in such circumstances and subject to such conditions as may be prescribed;
- (h) prohibiting any registered person sharing or agreeing to share the charge or remuneration for any medical or surgical advice, service, attendance or operation rendered or performed by him with any other registered person except in such circumstances and subject to such conditions as may be prescribed.

Correspondence.

NATIONAL HEALTH INSURANCE.

SIR: In your issue of May 21 there appear letters from Dr. Lovegrove and Dr. Gilbert in connexion with the new National Health Bill in Australia.

May I say how fully I agree with the statements contained therein. After five years of general practice in

Australia I have now nearly completed two years as assistant in an English country panel practice. I had intended buying a partnership, but as a result of my experience of panel work here have decided against so doing.

I have been chiefly impressed, not only by unnecessary calls, but by the fact that if an insured patient is confined to bed for a minor malady, such as a cold or influenza, he is bound to call one in to get a certificate.

In my mind it is this extra certification which is such an uninteresting and tremendous extra burden to the busy practitioner. In the distances of the country in Australia this would be a burden indeed.

I was amazed to see that the proposed fee *per capita* was 11s. In England one is constantly being called to meetings of protest about the inadequacy of the present fee of 9s. sterling, and there is propaganda going on all the time to petition for an increase. Furthermore it is regarded largely as a matter of time only before an increase will be granted.

Surely, then, the British Medical Association in Australia should consider very carefully before agreeing to such a very low medical fee and such a very high income limit.

Yours, etc.,

JOYCE H. W. WHARTON.

"Tirconnell",
Roade,
Northants.
(Undated.)

SIR: In your leading article of July 9 you accuse the profession of apathy in the past with regard to the preparation of our case for the national health insurance scheme. Now, Mr. Editor, let us take the facts as they stand. We are a widely scattered calling organized (?) into an association, the British Medical Association, which one has heard spoken of as the strongest trade union in the world. But every trade union has its proper organizers, who periodically tour the district under their jurisdiction and interview the members so that they do not become apathetic and lose sight of the fact that unity is strength. We, on the other hand, are not massed together in large works or factories, and consequently do not obtain the necessary close contact with our brother practitioners for strong and cohesive organization. This could be remedied to a considerable extent if the Branch councils bestirred themselves and sent men regularly to visit members and encourage them to take more interest in the work of the Association; the members would then feel that something was being done for their welfare. When a crisis faces the profession how strong are we? We have not been organized on proper lines so that we present a united front; but the charge of apathy lies more with the Branch councils and your own journal, who have done practically nothing to galvanize the rank and file into action. The gentlemen on the various committees are, no doubt, very good doctors and estimable citizens; but it would appear that they sadly lack the qualities of leadership and organizing ability, otherwise, knowing that considerable changes were about to take place, they would have set about to obtain the cooperation of the whole profession throughout the Commonwealth, so that when the national health insurance scheme was brought forward by the Government they would have had the backing of a strong and united Association with whose views they were already cognizant, and would not have waited until an attempt was made to have us accept a half-baked scheme. The average medical man appears, individually, to be very interested and worried about the future, but lacking a strong militant organization he does not know exactly what to do about it all.

In a letter published in the journal on March 13, 1937, I suggested that a fund be established so that we would be prepared for any emergency; but all that was done was to accept my initial donation, express a few pious words and let the matter drop. If that is not apathy on the part of the Federal Council and your journal I am at a loss for a better term. If my suggestion had then been acted

upon it is reasonable to presume that we would now be highly and efficiently organized, with a fighting fund worthy of the name. But perhaps it is yet not too late, and I would like again to make a few suggestions, namely, that:

(1) Organizers should be appointed in every State to periodically visit every medical practitioner and thus make personal contact. These men should be forceful but tactful and have the ability to explain the need for cooperation in a proper manner in order to gain the support of any apathetic members complained of in your article.

(2) THE MEDICAL JOURNAL OF AUSTRALIA, as the official publication of the British Medical Association, should adopt a more vigilant attitude with regard to safeguarding our rights and privileges, and that at least one-third of the space should be devoted to articles and news relating to national insurance until the present crisis is over.

I have searched regularly for some evidence that you have taken up the cudgels properly upon our behalf, especially with regard to regular articles calculated to organize and inspire the members; but, except for an occasional paragraph, your efforts have been most disappointing; instead you leave it to an unofficial but nevertheless excellent publication to give us most of the information and devote most of its space to consideration of the scheme that will have such a wide influence on the future of the majority of your readers.

As regards the capitation fee, it would appear that this is universally unacceptable, especially in view of the high income limit. An important point seems to have been overlooked in the terms of service. The Federal Treasurer stated that there was to be a first-class general practitioner service—a most all-embracing term, taking into consideration the high standard of general practice in Australia. Therefore, I would suggest that the terms of service be very clearly defined before any contracts are signed, if necessary a list drawn up of every item which will be included. This would probably be large; but we would then know where we stand. Any service rendered outside this list should be a matter entirely between the patient and doctor; then if the patient considers that he has been charged for any item included in the terms of service the onus should be on him to prove it. When all is said and done, we will be paid a definite capitation fee for rendering a limited service; therefore it is nothing to do with the National Insurance Commission or anybody else except the patient and his medical adviser as to what arrangements are made for any item rendered outside the contract, whether it be for an X ray examination, correcting an error of refraction or a major operation. If this point is not insisted upon we will find that we will have innumerable forms to fill in and go cap in hand before some board or tribunal in order to be permitted to take a radiograph of a patient's chest, perform a hysterectomy or even repair a hernia, and even then perhaps be refused permission to carry out some procedure that we are quite capable of doing, simply because we are general practitioners.

The matter of red tape should also be earnestly taken into consideration, otherwise we will find ourselves loaded with innumerable forms and certificates to be filled in. These will take up valuable time, which could quite easily be better employed attending to the welfare of our patients.

Yours, etc.,

R. H. OXBY DONALD.

Zeehan,

Tasmania,

July 11, 1938.

SIR: The letter of Dr. Maffey in the current issue of the journal will meet with unqualified approval among general practitioners, particularly those practising in the country.

The journal, which we depend upon for our authority, has been strangely remiss in its publication of national health insurance news, and with the exception of some bulletins issued by the Federal Council or by the special committee, has had practically no news for us at all.

True, a few letters have been published and some leading articles (three, I think). Of these articles one (since apologized for) will go down in our memory as a tactless blunder and a gratuitous insult to our rank and file, which is the journal's main support; it is the very one which has been made the most of, and used to flog us with in Parliament and in the lay Press.

There have been numerous British Medical Association meetings held in Sydney and many other centres, but no news of these has been published, except in the lay Press and over the wireless, and then we have only heard of them under the headings of "Rowdy Meeting" and "Uproar at Doctors' Meeting" *et cetera*.

There is one topic agitating us all at present, and one which will have the greatest effect upon our futures and our livelihoods, and it is that topic we want you to publish news of. We want it hot from the press as it develops and progresses. The lay Press will seize it, of course, but that does not matter; for they are already seizing all they can and publishing stuff which is not, I fear, always accurate.

The unofficial journal, *The General Practitioner*, has performed yeoman service, and with its questions and answers has probably done more than anything else to make us national health insurance conscious.

May I suggest that you publish news each week of what goes on, and may I also suggest that, when the Royal Commission sits, you publish verbatim reports of the proceedings, even if you have to enlarge your issues. We want the real thing and we do not want to depend any longer on what the daily Press and the wireless care to serve to us in a garbled and condensed form.

Yours, etc.,

CAWLEY MADDEN.

Mungindi,
New South Wales,
July 9, 1938.

SIR: Those of your readers who have read, in the supplements to *The British Medical Journal* of May 29 and June 5 of last year, the reports of the proceedings of the court of inquiry into a proposed increase in the British capitation fee under the *National Health Insurance Act* in England will be well aware of the methods adopted there by the Ministry of Health to counteract the considerable demand from the medical profession for such an increase. I would suggest to all who have access to those supplements that they should read carefully the reports. But for the information of those who cannot obtain copies, briefly the procedure adopted by the Ministry was to oppose the case of the British Medical Association and to present a case for reduction. Both sides tendered evidence relevant to the cost of living (calculated in fractions of a penny) and evidence relating to the amount of work involved in panel practice. Figures collected with great care by the British Medical Association were made useless by cleverly effective technical criticism (a fate which almost certainly awaits the similar evidence proposed to be tendered by our National Health Insurance Committee). The upshot of the inquiry was that no change was made, up or down, in the rate of the capitation fee, and the British Medical Association emerged sadder and apparently a little wiser, though this was not their first experience of such courts.

There are many lessons to be learned from these proceedings; among them are: that the Government looks on the medical profession and treats it much as it treats those bodies of unskilled labourers who are its more usual victims; that Government interest in a national medical service is not that it should be either "willing" and "contented", or even really effective as a health service, but rather that it should produce a "sound" financial result; that persons possessing the degrees of medical practitioners can be found to testify against their fellows (regional health officers—we may well watch with interest those who become candidates for such positions in Australia); and finally, and most importantly, that once the profession becomes entangled in the net of national health insurance, effective action or escape is practically impossible.

In connexion with this latter lesson, let me make a few remarks on liberty. At the present time, even the daily Press, which usually stands pretty firmly behind the Government, is somewhat alarmed at the encroachments being made on the traditional freedom of the individual. The method employed by "democratic" governments in these dangerous days is the system of licensing, for example, consider the *Transport Workers Act*. A long essay might be written on such a theme; but suffice it to say that the *National Health and Pensions Insurance Act* has an import to the medical profession very similar to that of the *Transport Workers Act* to labourers. It will become effective in this way. At present the medical profession still retains liberty, that is, absence of undue restraint. Providing it does not break the ordinary laws of the land it is not subject to interference. To accept service under national health insurance will be equivalent to receiving a licence; and that licence may be withdrawn on the decision of some official of the National Health Insurance Commission, with consequent ruin to the unfortunate victim. This may seem exaggeration; but the fact that it occurs today in England under the panel system has been noted by Lord Hewart, Lord Chief Justice of England, in his book "The New Despotism". He refers to the treatment of panel doctors as "pure despotism". "The doctors are liable, at the mere discretion of the official who acts for the Minister for Health, to be ruined professionally by being struck off the panel, or as a lesser punishment, to be fined to an arbitrary extent", he writes.

Bearing in mind that the income limit in Australia is to be £365, it is obvious that practically all general practitioners would be absolutely dependent on insurance medical practice. Consequently once the Government has got us signed up, nobody will dare to resign, and will thus be forced to accept any humiliation and the inevitable increases in onerous regulations that will occur, as bureaucracy gets into its stride. It is so easy for a man sitting in an office to think that such-and-such would constitute a desirable modification of the system, and thinking only of statistical or financial results, and not of the individual doctors affected, to promulgate a new regulation that the doctors would be powerless to resist.

At the present time we face the gravest crisis that has confronted the medical profession in Australia. What we do now decides our history for time to come. The recent "plebiscite" revealed a unanimity amongst the profession that we are unlikely to see attained again. Consequently the crucial question for the Government is whether we can be either forced or induced to accept service on any terms. Once we have accepted service, the terms can be changed, just as the capitation fee in England was reduced. Therefore this is our time to act; we have answered the "plebiscite" in the negative, and this fact should constitute our instruction to our representatives, who, after all, might well remember that they are our representatives and are not our governors, and it is not the place of the council to try either to overrule our objections or to rush on with what they think should be done when our wishes are plain.

Now bear in mind the English court of inquiry and think of the Australian Royal Commission. The position is that both sides to the dispute hope to be upheld; and whichever side loses (I wonder which it will be?) will refuse to be bound by the finding. The truth of this matter is that the Royal Commission was a political expedient, without which the National Health Insurance Bill could not have been passed. The Treasurer has repeatedly stated that the bill could not be altered because its "sound actuarial basis" could not be interfered with without the collapse of the whole jerry-built structure; and if that was true while the bill was before Parliament, how can it be any less true now?

Sir, let us maintain our independence and dignity, and refuse to be treated like wage slaves. A health service for the community is essential, and as a profession we supply this to the best of our ability at present. But what we do not value ourselves we cannot expect others to value. Let us remember that we are a profession with a tradition of service—and of independence. At this juncture

we need to pledge ourselves to stand together in refusing to accept service under the Government scheme while yet we have freedom to refuse, and to demonstrate our good faith we need to substitute another scheme, which is a genuine health service, representing a fair charge to the community and a fair rate of remuneration for ourselves, and also allowing us to retain our present freedom from bureaucracy (a tentative scheme has already been accepted in principle by the Central Southern Association). The information being collected by the National Health Insurance Committee might well be used for the preparation of such a scheme, and the enormous expense of an elaborate but useless case before the Royal Commission avoided.

Finally I would like to point out that your leading article in THE MEDICAL JOURNAL OF AUSTRALIA of May 14 was quoted, to our great detriment, during the second reading debates in Parliament.

Yours, etc.,

BRYAN W. MONAHAN.

Canberra,
Federal Capital Territory,
July 15, 1938.

SIR: The discussions and correspondence over the introduction of national insurance in Australia have brought out some criticism concerning lack of news, not from the printing press, in the journal. Some statement seems necessary to clarify the position.

THE MEDICAL JOURNAL OF AUSTRALIA started as a weekly publication in 1914, taking the place of a monthly journal owned by the New South Wales Branch of the British Medical Association, and a monthly journal owned by our Victorian colleagues. It was and is intended primarily as a medium for the publication of scientific matter, and it has always accepted reports of scientific research done in Australia. In addition it has to record the business and scientific meetings of the various Branches of the British Medical Association in the Commonwealth.

The wide range of medical journals in other parts of the world quoting articles that have appeared in our journal shows that it is widely read and worthily fills its place as a medium for reporting the results of scientific investigation and medical research.

From the workaday point of view it may be mentioned that the forms of the journal are closed on Monday afternoon and go to the printing press on Tuesday, and the journals are finished, wrapped and addressed and sent to the post office on Thursday morning for distribution to all parts of Australia. Even in Sydney it is not delivered until Friday, and one can easily estimate how much later it reaches other States and far-distant centres.

All weekly publications with an Australian-wide circulation are in the same position, and in dealing with matters that change from day to day, as for instance the debates in Parliament *et cetera*, any weekly journal with an Australian-wide circulation can only deal with such matters in a general way.

For authoritative information on medico-political matters THE MEDICAL JOURNAL OF AUSTRALIA naturally looks to the Federal Council as regards the Federal sphere and to the various Branch councils as regards purely intrastate affairs.

The correspondence columns of the journal are always open to members to express their views and criticisms, provided, naturally, the views are expressed in becoming language and are not libellous.

Of course it is understood that when such correspondence expresses adverse views about individuals or organizations or the journal, the member must sign his name for publication.

Yours, etc.,

T. W. LIFSCOMB,

Chairman of Directors, Australasian
Medical Publishing Company, Limited.

Sydney,
July 21, 1938.

THE NATIONAL HEALTH EMERGENCY INSURANCE FUND.

SIR: In a circular sent to all members of the New South Wales Branch of the British Medical Association notice is given of the formation of a fund to "assist in defending and maintaining the interests of members of the medical profession in Australia in any matters relating to the National Health Insurance".

While giving information as to the appointment of trustees to control this fund, no information whatever is given as to the probable amount required to provide legal and actuarial assistance, for which, presumably, this fund is to be collected.

But the most remarkable part of the circular is that notice is given of a resolution unanimously passed at a meeting of the council of the Branch held on Tuesday, June 21, of this year. This final resolution was to the effect that the first contribution be the sum of x guineas from each member.

I have obtained information from legal friends that the legal costs for one side for King's Counsel's and junior counsel's fees, together with solicitor's fees, in the starting-price bookmaking commission was between £5,000 and £6,000. This commission sat for several months. It would seem improbable, therefore, that the legal costs for the British Medical Association's representation at the national health insurance commission will exceed this amount, if they reach it. Suppose we add another £1,000 for actuarial fees and for witnesses' expenses. It would therefore appear that £7,000 should be ample to cover these expenses, at any rate as a first call.

On making inquiries from the Secretary of the New South Wales Branch of the British Medical Association, I was told that provision had to be made for expenses other than these. I was informed, for example, that the last meeting of the Federal Council of the British Medical Association cost £500 for air travel and hotel expenses of three delegates from each State. In addition to this I was told that a meeting of the delegates from different centres in New South Wales cost £150 for similar expenses.

It must be agreed that these costs are grossly extravagant. There can be no real necessity for three delegates from each State in this connexion. Surely one delegate to express the conclusions and desires of each State should be ample, and most of the business could be conducted by letter or by telephone.

The important decision as to what evidence is to be provided for the commission must lie with the senior counsel briefed for the work, and he will only be cluttered up by the conclusions and recommendations of frequent meetings of the Federal Council. The same probability will apply to the resolutions of the different Branches.

I find on inquiry that there are over 1,700 members of the British Medical Association in New South Wales. According to Professor Harvey Sutton there are 2,287 medical practitioners resident in New South Wales. Even if we accept the figure of 1,700 members, the point is that from New South Wales alone it is aimed to collect 1,700 x guineas. If similar levies are made in other States, the total would probably amount to 5,000 x guineas. Even if only half the members subscribe x guineas each, a minimum of 2,500 x guineas will be collected, not to reckon on smaller amounts given by some who do not subscribe the full call. Let us reckon upon a total of 2,500 x guineas, and this, forsooth, is marked down as the first contribution.

I feel that the general practitioners have got in a panic and have stamped one another into this extraordinary levy. It is easy to understand that in the case of a man whose income depends largely upon contract practice, the x guineas is a small amount in comparison with the annual loss which he is liable to sustain if some reasonable terms are not provided for the national insurance medical services. But that by no means shows that it is necessary for him to contribute the amount specified, especially as a first instalment. Those of us who have no personal financial interest in the national insurance scheme are

nearly all very willing and even anxious to help our colleagues who are adversely affected thereby; but it is surely unreasonable to expect, or even suggest, that such men should contribute an unnecessarily large amount for this purpose.

Let us consider what might quite easily happen if the amount mentioned above were actually collected.

The first probable effect will be an unfavourable impression on the minds of the lay public. If the public become aware of the fact that a very large sum has been collected for purposes of defence in this matter, people will inevitably say that if the medical profession can afford to spend such a large sum there is no need for the public to waste its sympathy upon that body.

Secondly, the fact that such a large sum would be available is sure to occasion extravagance in its expenditure. There is already evidence of this in the fantastic cost of holding a meeting of the Federal Executive (£500) and of the delegates to a State conference (£150). This example is sure to be followed by the lawyers acting for the Association. It is always found that if a large sum of money is available legal proceedings are drawn out to a much greater degree than when the funds are limited.

It is very likely also that the knowledge of the existence of a large sum of money will provoke some newspaper or other organization to suggest that provision is being made for bribery. Though, of course, such a suggestion would be false, it would have the effect of further alienating public sympathy.

It has been suggested to me that an appeal to the Privy Council might be necessary, and that for this purpose abundant funds have to be available. Such an event as an appeal to the Privy Council cannot be possible, seeing that the commission is merely one to advise the Federal Government on certain aspects of the insurance bill, and no appeal against the findings of the commission can possibly be referred to the Privy Council. The only possibility of an appeal to the Privy Council would be on the grounds that the Act was unconstitutional. It seems to me a forlorn hope to launch an appeal on such grounds unless it is an infringement of State rights, seeing that a similar scheme is in operation in Great Britain. But in the event of an appeal being necessary, further funds could be collected without putting an undue strain on the contributors.

I personally do not feel inclined to contribute the subscription asked for if sums like £500 are to be wasted on a meeting of the Federal Executive, or if legal representatives are to be given *carte blanche* in the matter of costs in the proceedings before the commission.

My objections are practically all on the grounds that such a subscription is unnecessarily large. If all members of the Association were asked to contribute £2 2s. per head, everyone would do so without hesitation. This would provide a sum of between £8,000 and £10,000. A further levy of £1 is., if necessary, could be made on one or two occasions without seriously incommencing any member, and would provide for any unforeseen expenses over and above the first amount.

If those whose practices depend wholly or largely on contract work have any fears about the outcome, and think that a larger subscription will help, it is, of course, open to any or all of them to provide that extra contribution; but it is absurd to expect all members of the Association to follow the counsel of panic which has been responsible for the extraordinary demand just made.

It has come to my knowledge that there is a residuum of several thousands of pounds from the fund collected for establishing the model lodge agreement. This money was collected for a specific purpose and cannot be used for any other purpose except by order of the court or act of parliament. Exactly the same result will follow this levy if the lawyers do not absorb the whole of the superabundant funds.

To avoid all these ill effects the subscription asked should not exceed two guineas at any one call or four guineas in all. Asking for an extravagant subscription is likely to result in the fate of the old woman who lived

in a vinegar bottle. She made such extravagant demands from the fairy that she finished up still living in the vinegar bottle.

Yours, etc.,

E. H. MOLESWORTH.

"Beanbah",
235, Macquarie Street,
Sydney.
July 13, 1938.

National Health Insurance.

ROYAL COMMISSION.

We have been informed that the terms of reference of the Royal Commission on the *National Health and Pensions Insurance Act, 1938*, will be as follows:

1. The annual sum of money per insured person to be paid to insurance medical practitioners in all areas where medical benefit becomes available, which the National Insurance Commission should provide under the National Health and Pensions Insurance Act, 1938 (excluding amounts otherwise to be provided in respect of extra travelling in country districts), having regard to the scope of the treatment to be provided under that Act and to the terms and conditions of existing contract practice in Australia, and other relevant considerations.

2. The methods of distributing among insurance medical practitioners the total amount provided under paragraph 1, having regard to the treatment required by insured persons when away from their homes.

3. The annual sums to be provided by the National Insurance Commission in respect of insured persons resident more than three miles from the nearest insurance medical practitioner for payment to such practitioners towards the cost of travelling and the time spent in travelling.

4. The methods of distributing among insurance medical practitioners the total amount provided under paragraph 3.

5. The circumstances and conditions under which insurance medical practitioners may require payments from insured persons in respect of services rendered in pursuance of the National Insurance Act, or in respect of services rendered otherwise than in pursuance of the National Insurance Act.

6. The appropriate annual sum of money to be paid under contract to medical practitioners by organizations which may provide on a voluntary basis for the treatment of the wives and children of insured persons, having regard to the terms of existing contract practice in Australia, and to the amount recommended under paragraph 1.

7. The conditions under which medical practitioners who enter into contracts for the medical treatment of the wives and children of insured persons may require payment for services outside the terms of their contracts.

8. The minimum period to which the recommendations of the Royal Commission should apply.

We have been informed that the Royal Commission will sit first in Sydney on August 8, 1938.

THE NATIONAL HEALTH INSURANCE COMMITTEE OF NEW SOUTH WALES.

A MEETING of the National Health Insurance Committee of the New South Wales Branch of the British Medical Association was held on July 24, 1938, at the British Medical Association House, 135, Macquarie Street, Sydney. The main business of the meeting consisted in consideration of the terms of reference of the Royal Commission, and the presentation of the case for the profession before the Royal Commission.

The next meeting of the committee will take place on July 31, 1938.

Books Received.

REFRACTION OF THE EYE, INCLUDING ELEMENTARY PHYSIOLOGICAL OPTICS, by C. Goulden, O.B.E., M.A., M.D., M.C., F.R.C.S., with an introduction by Sir J. H. Parsons, C.B.E., F.R.C.S., F.R.S.; Second Edition; 1933. London: J. and A. Churchill Limited. Demy 8vo, pp. 285, with 181 illustrations. Price: 12s. 6d. net.

Diary for the Month.

- AUG. 2.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 AUG. 3.—Western Australian Branch, B.M.A.: Council.
 AUG. 3.—Victorian Branch, B.M.A.: Branch.
 AUG. 4.—South Australian Branch, B.M.A.: Council.
 AUG. 5.—Queensland Branch, B.M.A.: Branch.
 AUG. 9.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 AUG. 12.—Queensland Branch, B.M.A.: Council.
 AUG. 16.—New South Wales Branch, B.M.A.: Ethics Committee.
 AUG. 17.—Western Australian Branch, B.M.A.: Branch.
 AUG. 18.—New South Wales Branch, B.M.A.: Clinical Meeting.
 AUG. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 AUG. 24.—Victorian Branch, B.M.A.: Council.
 AUG. 25.—South Australian Branch, B.M.A.: Branch.
 AUG. 25.—New South Wales Branch, B.M.A.: Branch.
 AUG. 26.—Queensland Branch, B.M.A.: Council.

Medical Appointments.

Dr. G. A. Waterhouse has been appointed Public Vaccinator at Euroa, Victoria.

The following appointments have been made at the Night Clinic of the Adelaide Hospital, Adelaide: Dr. G. E. Jose, Medical Officer in the Male Section; Dr. J. M. Dwyer, Second Medical Officer in the Male Section; Dr. H. M. Fisher, Medical Officer in the Female Section.

The following honorary appointments have been made at the Adelaide Hospital, Adelaide, South Australia: Dr. H. K. Fry and Dr. S. R. Burston, Physicians; Dr. K. S. Hetzel, Dr. F. R. Hone and Dr. E. McLaughlin, Assistant Physicians; Dr. D. R. W. Cowan, Physician to the Chest Clinic; Dr. H. W. Wunderly, Assistant Physician to the Chest Clinic; Dr. A. T. B. Jones, Surgeon; Dr. I. A. Hamilton and Dr. A. H. Lendon, Assistant Surgeons; Dr. H. R. Pomroy, Surgeon-in-Charge of the Orthopaedic Department; Dr. L. O. Betts, Assistant Surgeon to the Orthopaedic Department; Dr. J. R. S. G. Beard, Gynaecologist; Dr. R. F. Matters and Dr. B. H. Swift, Assistant Gynaecologists; Dr. H. M. Jay, Aural Surgeon; Dr. H. A. McCoy, Radium Therapist; Dr. J. S. Verco, Deep X Ray Therapist; Dr. C. Gurner, Assistant Deep X Ray Therapist; Dr. W. C. T. Upton, Dermatologist with status of Assistant Physician; Dr. A. C. McEachern, Assistant Pathologist; Dr. E. C. Black, Dr. A. J. Hakendorf, Dr. S. R. Hecker, Dr. H. E. Pellew, Dr. C. B. Sangster and Dr. N. T. M. Wigg, Anaesthetists.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xvi to xviii.

- AUSTIN HOSPITAL FOR CANCER AND CHRONIC DISEASES, HEIDELBERG, VICTORIA: Resident Medical Officer.
 CHILDREN'S HOSPITAL (INCORPORATED), PERTH, WESTERN AUSTRALIA: Junior Resident Medical Officers.
 DEPARTMENT OF HEALTH SYDNEY, NEW SOUTH WALES: Medical Officer.
 NAREMBEEN ROAD BOARD, NAREMBEEN, WESTERN AUSTRALIA: Medical Officer.
 SAINT VINCENT'S HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Clinical Assistants.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
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